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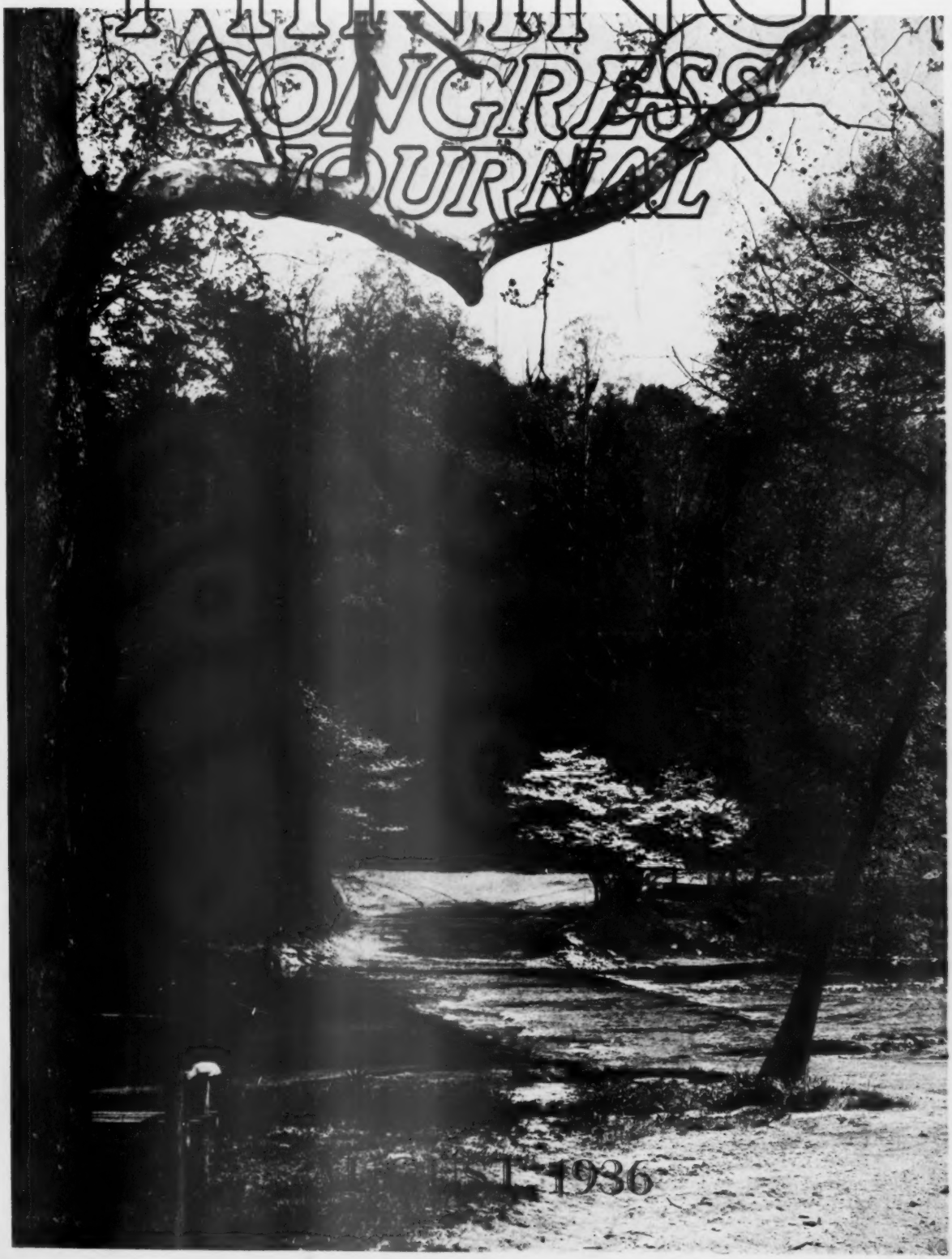

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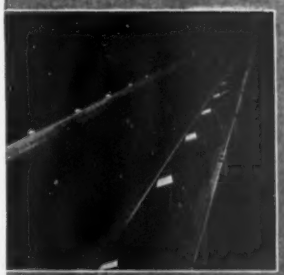

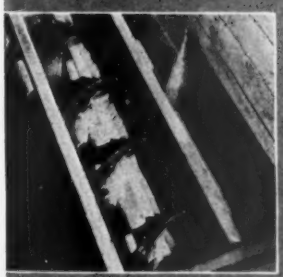

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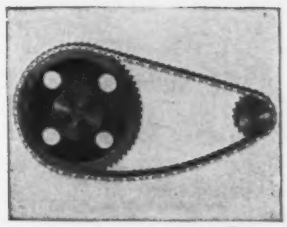

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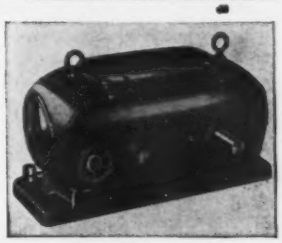

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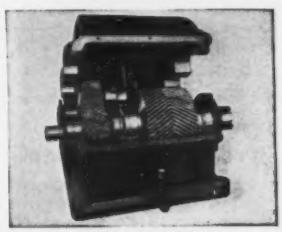

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The Mining Congress Journal

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EXTRA!

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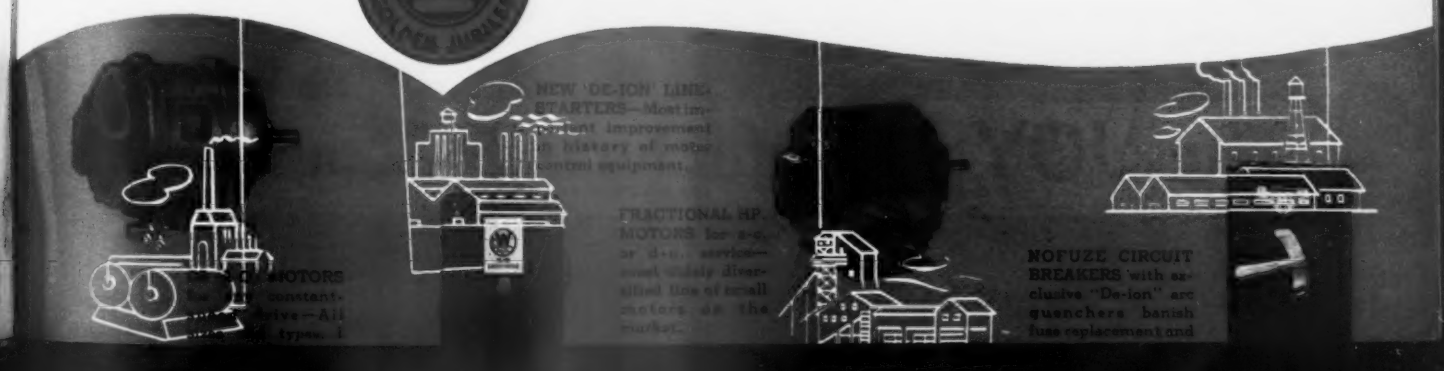
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Good and Bad Business

PROFITABLE business is based on a continuous transfer of goods from one to another. Each transfer being of goods carrying some improvement created by labor, at an increased price, to cover a profit for labor, management and capital.

Such business continually expands as raw material is fabricated, transported and distributed. The purpose of government is to protect these activities against the lawless.

Unprofitable business results where each service must be sold for less than cost leading to reduced wages, underpaid management and profitless capital.

Such enterprises go down to despair more rapidly than profitable enterprises march upward to prosperity.

Profits lead upward upon an inclined plane, rising as fast as competitive effort will permit, while losses lead directly downward with no impeding influence. Unprofitable efforts, whether individual or collective, lead unerringly to disaster.

Collective disaster means more taxes and greater burdens upon individual effort. When these burdens become too great, individual effort, which cannot bear the greater burden, ceases. One by one payrolls are terminated and in equal ratio doles become necessary.

Full employment is impossible without full production. Full production is impossible without full consumption. Full consumption is impossible except by a full use of all of a country's money.

Full use by the people of all the country's money medium is impossible where the country's government has absorbed 60 per cent of its money.

Today more than 60 per cent of the nation's money is tied up in Government bonds and this percentage is rapidly increasing—not only is this money out of use in the world of business but it is earning interest at the rate of nearly nine hundred million dollars annually to be paid from the profits of business derived from the use of but 40 per cent of the nation's money.

But the nation's business must go on—our people must be fed, clothed and housed. To accomplish this task with an inadequate currency, resort must be had to credit expansion or to inflation. To make 40 per cent of our money do the work of the whole requires an inflation of 150 per cent, and the more money borrowed and wasted by the Government the greater the percentage of required inflation.

It may be said that this borrowed money does not go out of circulation but it does go largely into non-production enterprises which neither feed nor clothe our people.

It is the baker who uses the grain of the farmer to make bread for the table of the consumer.

It is the butcher who converts the stock of the farmer into meat for the table of the consumer.

It is the manufacturer who turns the wool and the cotton of the farmer into clothing for the consumer.

It is the transportation company which delivers to the processer these various products and again transports them to the markets.

It is the merchant who standardizes and stores these various products for the convenience of his customers.

And back of all these is the mining industry which provides the basic material, the machines and the power, and to a great extent, the speculative daring which makes for progress.

These are the agencies which make for prosperity and without these and similar agencies there can be no prosperity. Money distributed through other channels is more than likely to be damaging and wasteful; more than likely to require inflation creating taxation and bankruptcy.

The American people will pull out of this emergency. They will do business with or without money. Where money is not available American business will survive on credit. Bad business will fail; good business will succeed with or without the money which should be available for business by business men instead of by Government.

The Mining Congress Journal

Volume 22 AUGUST, 1936 Number 8

E. R. COOMBES, Editor

A Journal for the entire mining industry published by The American Mining Congress

What Constitutes Unemployment

THE PROPOSAL to inaugurate a truly accurate census of the unemployed meets general approval. So far most of the figures submitted have been largely guesswork, and there is no accurate record of just how many people are unemployed. It has been variously estimated as between five million and fifteen million. Certainly the number, whatever it may be, is too large. In attacking any problem one of the fundamentals of its solution is to obtain the facts. If the Federal Government is to continue feeding all of those who say they are hungry and unable to provide for their own livelihood, then some competent agency should make an investigation to determine who is entitled to such aid.

It is unthinkable that a country of our resources shall for any length of time maintain millions of its citizens in idleness because of lack of opportunity. It is easily understandable that we may have many citizens who, learning that they can eat without labor, will be loath to seek employment. The rebuilding of this country, after its long period of inactivity, will make employment for millions of men and women; the inventive genius of our people will undoubtedly develop many fields for pioneering and increase in employment.

By all means let us have a census of unemployment and a complete examination of its causes.

At the Crossroads

FOR MANY YEARS we have heard a great deal about the rise of socialism, communism, and the stealthy tread of dissatisfaction among our people. It has not all been an alarmist clatter. Witness the growth of the Townsend Plan, the Huey Long "Share the Wealth" idea, and similar proposals. The Townsend conference recently held at Cleveland was remarkable in many ways. More delegates attended than anyone believed possible. It is obvious that these people believe the $200-a-month pension proposed is an attainable thing. The Congressional investigation into the plan with its resultant exposures of its impossibility apparently did not register. Some of them actually believe that the plan is divinely inspired and are prepared to go to any length to promote it.

Our present situation, with our mounting load of debt is worthy of serious consideration, but it might be worse. Let us not forget the following proposals, which are being actively promoted:

Dr. Townsend's plan for a $200 a month pension for all those over 60, and the large number of honest, if misguided persons who believe in it.

Father Coughlin's proposal for credit and inflation which have annexed a large following and promise to give all conservatives of whatever political faith the "jitters."

The ever-increasing group who are avowedly working tooth and nail to bring about Government ownership of all natural resources. Public ownership of railroads and utilities, and complete domination of business by politics.

The program of the American Federation of Labor with its demand for a 30-hour week, and a Constitutional amendment that will permit Congress to prescribe social legislation without interference from the courts.

All of these things must be considered, and at the present time when we are involved in a "Presidential Year" and much thunder will be heard from every quarter, it will be well for us all to scrutinize carefully the records, the view and the principles of all candidates for office.

"There Ought to Be a Law"

THE TIME-HONORED "ignorance of the law is no defense" apparently must be discarded, for it is increasingly impossible for any human being to have knowledge of the multitude of laws that surround us. The 74th Congress passed 1,722 bills. Of these 985 were public laws and resolutions. The theory that the remedy for all ailments is "there ought to be a law . . ." has been taken quite literally.

The courts are crowded with suits to determine corporate and individual status under many of our laws, some of which are so ambiguous that lawyers themselves are unable to determine their application. Much of the legislation passed by the 74th Congress will be tried out in the courts. It is anticipated that the Revenue law will offer much controversy; certainly the National Labor Relations Act is being contested in many state courts; the chain store legislation is subject to various interpretations and some of the major laws recently enacted have already been declared unconstitutional.

What is the cause of all this law-making? It has been demonstrated over the period of our national life that a multiplicity of laws fails to secure the result. Let us hope that the time is near at hand when the orgy of laws will be over, and that we will return to the simple premise of our forefathers that the nation least governed is the best governed.

CURRENT LEGAL PROBLEMS of the Mineral Industries

By SHELDON C. TANNER*

LAW is merely a reflection of human activity of some sort. As applied to a particular industry it may be examined from a functional point of view, consistent with the objects sought to be attained. When we direct our attention to the development of the mineral industries, certain problems stand out as pre-eminent. Many of these industries are hazardous and must be carried on at the risk of personal injury and property loss to others. What safeguards are necessary for the protection of the public? Those who engage in the exploitation of natural resources do so under competitive conditions. What legal principles are best adapted to facilitate contractual relations within the industry? The state has an interest in the safety of those employed in dangerous occupations. What regulations are necessary to protect such persons from accidental injury? Finally, the mining industry, particularly, has been constantly embroiled in labor disputes. What measures are best calculated to promote industrial peace? These problems are more or less common to all of the states, although they have not met with the same solution. The following discussion will be based largely on the legislative and judicial trend in Pennsylvania, with such explanation of the cases as is necessary for a proper understanding of the principles involved.

Duty to Protect the Public

There is a general legal maxim that every man has the right to the natural, proper and profitable use of his own land, and if, in the course of such use, unavoidable loss is brought upon his neighbor without negligence, it is *damnum absque injuria*—damage without legal injury. It is applied to the mineral industries within narrow limits, and to some extent involves a conflict between agricultural interests and the commercial utilization of natural resources. In a famous English case, *Rylands* v. *Fletcher*,[1] the defendants, who were mill owners, had constructed a large reservoir for the collection of water. The reservoir was built on a site where there was an abandoned shaft of a disused coal mine. The shaft had become filled with dirt and debris, and due to the negligence of the contractor, was not properly reinforced. When the water collected in the reservoir, the barriers gave way, the shaft was flooded, and the water flowed into the tunnels of an adjoining mine owned by the plaintiff. The House of Lords decided that the person who brings upon his land anything likely to do mischief, must keep it in at his peril, and if he does not do so, is answerable for all the damage which is the natural consequence of its escape. The principle generally deduced from that decision is stated to be: "An owner of land is not liable for the ordinary course of the enjoyment of the land, as where an accumulation of water passes off onto the lands of another; but he is liable for a non-natural use, as by introducing water either above or below the ground which might escape and pass off onto the lands of another."

The doctrine in *Rylands* v. *Fletcher* has been accepted or rejected in almost every American jurisdiction where coal mining is carried on. It has had a curious history in Pennsylvania. In *Sanderson* v. *Pennsylvania Coal Company*,[2] plaintiff owned a tract of land within the limits of the City of Scranton, upon which he built a handsome residence and made other improvements. A clear mountain stream supplied the home with water for culinary and bathing purposes, as well as a fish pond.

Sometime after the completion of these improvements, the defendant opened a coal mine about three miles up the stream. In opening the mine a drift was made out of which the water flowed, and following the law of gravity, it found its way into the stream. It was later found necessary to pump water out of the mine. As a result, the fish in the pond died, the pipes in the house corroded, the water became unfit for domestic purposes, and the property had to be abandoned. The trial court absolved the coal company from liability. There were two appeals to the Supreme Court. In the first, the lower court was reversed, but in the second, the personnel of the court had changed, the former decision was overruled, and the original decision of the lower court was reinstated on the following grounds:

> "The plaintiff's grievance, is for a mere personal inconvenience, and we are of opinion that mere private personal inconvenience, arising in this way and under such circumstances, must yield to the necessities of a great public industry, which although in the hands of a private corporation, subserves a great public interest. To encourage the development of the great natural resources of a country, trifling inconveniences to particular persons must sometimes give way to the necessities of a great community."[3]

It is idle to say that the plaintiff suffered a trifling inconvenience, other than from a public point of view. As a general proposition, the power of ownership is absolute, except that the owner "must not disregard his obligations to the public," and "must not disregard his neighbor's rights."[4] For this reason, the foregoing decision is clearly an exception to the general rule, and has been so declared.[5] In the first place, it is only natural drainage that the owner of a lower field is under the servitude of receiving. A coal company has no right to collect water, and by means of an artificial channel, conduct it upon the land of another;[6] or to raise it to the surface by artificial means and discharge it into a stream of pure water which, by reason of its higher elevation, does not form the natural drainage of the mine.[7] In the second place, the privilege of contaminating a stream, to the injury of a private individual, extends only to the mining industry. As between other riparian owners, the lower user is entitled to the stream in a reasonably pure state, subject to a reasonable use by upper proprietors. The latter may use the water for household purposes, or for watering stock, and also for manufacturing purposes to an extent that is not unreasonable,[8] but may not contaminate it to the prejudice of a lower proprietor, as, for example, by the discharge of sewage.[9] In

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* Professor of Economics, The Pennsylvania State College, Vice President, American Association of Teachers of Business Law; Author, *"Principles of Business Law in Pennsylvania,"* Geo. T. Bisel Co., Phila., 1934; *"Industrial Accidents Within the Meaning of the Workmen's Compensation Act,"* TEMPLE LAW QUARTERLY,, June, 1935, abstracted, CURRENT LEGAL THOUGHT, August, 1935; *"Developments in Newspaper Libel Laws,"* JOURNALISM QUARTERLY, September, 1935; *"Intervening Limitations in the Workmen's Compensation Act,"* UNIVERSITY OF PITTSBURGH LAW REVIEW, May, 1936. See WHO'S WHO IN AMERICAN EDUCATION, 1935-36.

[1] L. R. 3 H. L. 330.
[2] 86 Pa. 401 (1878).
[3] Pennsylvania Coal Co. v. Sanderson, 113 Pa. 126 (1886).
[4] Habue v. Wheeler, 157 Pa. 325 (1893).
[5] Commonwealth v. Emmers, 33 Pa. Superior Ct. 151 (1907).
[6] Lehigh Navigation Coal Co. v. Pittston Coal Co., 289 Pa. 492 (1927).
[7] McCune v. Pittsburgh & Baltimore Coal Co., 238 Pa. 83 (1913).
[8] Brown v. Kistler, 190 Pa. 499 (1899).
[9] Klenzing v. Allday, 63 Pa. Superior Ct. 304 (1916).

the third place, the right of the mining industry to pollute a stream disappears altogether when the public is injuriously affected. To this extent a permissive nuisance which offends a single individual will be enjoined where the public is annoyed and complaining. In *Pennsylvania Railroad Company* v. *Sagamore Coal Company*,[10] the Commonwealth and others brought suit to enjoin a coal company from discharging acid mine water into a stream, 22 miles long, with a draining area of about 130 square miles. A water company had constructed a dam below the mine with a capacity of 251,000,000 gallons of water, and a reservoir capable of holding 6,500,000 gallons, serving 75,000 individual consumers. It was held that a landowner on a watercourse, whose rights are only those of a riparian proprietor, could not have such rights enlarged to one of property in the use of the water by the discovery or development of coal on his lands, and that it was a nuisance to pollute a stream from which the public gets its supply of water.

Whatever immunity is allowed for the discharge of mine water into a stream does not apply to the escape of gas onto the lands of another. In *Venzel* v. *Valley Camp Coal Company*,[11] there was an explosion of gas in the mine of the defendant, and it was alleged that the gases escaped into an adjoining mine and there caused the death of the plaintiff. The defendant had erected heavy doors to prevent its escape and could not be charged with negligence or liability, but the dictum in the case is important because of the clear trend of judicial opinion, and the somewhat belated vindication of the doctrine in *Rylands* v. *Fletcher*. After discussing that case it was said:

> "Where dangerous gases accumulate on a property from its lawful use in mining coal, and where it is reasonably foreseeable that such gas may escape and injure persons on adjoining property, there is an affirmative duty on the owner to prevent, if possible, the escape of such gases to his neighbor's property. We have so held with regard to water coming from mines which drains into streams used as public drinking supplies. To that extent, the case of Pennsylvania Coal Co. v. Sanderson, 113 Pa. 126, and all other Sanderson Cases treating the subject, have been overruled. It is the owner's duty to use such care as a reasonably prudent man would use under the circumstances to safeguard not only his employes but other persons within the zone of known or apprehensible danger on adjoining properties from injury by reason of the escape or negligent ignition of such gas."

A somewhat different problem is presented when the owner of a mineral estate undermines the surface to the prejudice of the public. The right of severance of a freehold estate into one or more estates of freehold within the same boundaries was recognized more than a century ago. Such ownership may be divided by lines perpendicular as well as by lines parallel with the surface, and consequently the mineral under the surface may constitute a separate estate from the surface land. Unless the parties provide otherwise, the owner of the surface is entitled to a reasonable support for his land, and the owner of the minerals may extract only so much as he can get without injury to the superincumbent soil. The right to let down the surface, however, may, by express contract, be vested in the owner of the mineral estate.[12] In *Pennsylvania Coal Company* v. *Mahon*,[13] the plaintiff purchased the surface of a tract of land, upon which he built a home, and in express terms assumed the risk of damage to the property that might arise from mining out the coal. Thereafter the Pennsylvania legislature passed the Kohler Act,[14] prohibiting the undermining of anthracite coal as to cause a cave-in, collapse, or subsidence of any private dwelling, factory, public street, road, bridge, or right-of-way used in the service of the public. Plaintiff sought the protection of the act, but it was declared unconstitutional by the Supreme Court of the United States. Mr. Justice Holmes, who wrote the majority opinion, observed: "the question at bottom is upon whom the loss of the changes desired should fall. So far as private persons or communities have seen fit to take the risk of acquiring only surface rights, we cannot see that the fact that their risk has become a danger warrants the giving to them greater rights than they bought." Pennsylvania statutes, passed before and after the Kohler Act, require adequate and permanent support sufficient to uphold the stability of the surface of streets and thoroughfares in boroughs and municipalities.[15]

Contract Relations

The disputes that arise in connection with the mineral industries are far too numerous to cite, other than the difficulties frequently encountered by the courts in the settlement of controversies peculiar to the acquisition and development of natural resources. These cases involve interests in land, the interpretation and duration of leases, notice of rescission, adverse possession, and abandonment. A few comments are necessary for a proper understanding of the decisions, and of the pitfalls to be avoided in undertakings of this sort.

In *Stockdale* v. *Sellers*,[16] the plaintiff alleged that he entered into an oral agreement with the defendant for the purchase of a one-twentieth interest in a certain oil well, which later produced gas in large quantities, and that he sent a check in payment which the defendant kept for about three months and then returned. By way of explanation it should be observed that nearly every state has a statute requiring the sale of an interest in land to be in writing, signed by the owner or by his agent authorized in writing. This is commonly known as the Statute of Frauds. Pennsylvania statutes are more comprehensive than those of most of the states, and apply not only to the sale of an interest in land, but also to leases for more than three years, assignments, parol gifts, and trusts except such as may arise by implication or construction of law.[17] It is frequently necessary to distinguish between a sale and a lease. The right to enter upon the land of another and remove ore on a royalty basis is a lease, and would not have to be in writing unless the right is granted for a period of more than three years.[18] On the other hand, the sale of coal in place would have to be in writing, even though payment is to be made on a tonnage basis.[19] In the case cited above, the well and equipment were attached to the realty and part of the real estate, and it was held that title could pass only by an assignment or deed in writing.

The interpretation of a contract, as a judicial problem, arises because of the ambiguity of the language used by the parties in their agreement. In *Laney* v. *Columbia Natural Gas Company*,[20] plaintiff leased to the defendant a tract of land for the production of oil and gas, with the provision that the defendant should pay a royalty of "$20 per lb. per annum first minute pressure based on six-inch casing." Does this mean the first minute pressure reading of each well taken as soon after completion as practicable, or does it mean that tests are to be made quarterly and payments adjusted on that basis from time to time? The defendant made payment for two and a half years on the first well, based on the first and only test, but at the end of that time the plaintiff complained that tests should be made quarterly and payments made on the basis of each quarterly reading. This is the sort of dispute which cannot be reconciled by reference to the contract, inasmuch as either contention could be sustained as far as the writing is concerned. An attempt was made to prove a custom or usage to the effect that wells which are based on a minute pressure gauge are tested at the middle of the quarter in which payment is due, and it would undoubtedly prevail if it could be shown to be certain, definite, uniform, notorious, and reasonable in its application, but no attempt was made to show that it was known generally to the people of the county in which the land was situated. The jury found that the parties contemplated, when the contract was executed, that but one test was to be made. This finding was sustained.

The duration of a lease is frequently a matter of dispute. The man who leases and develops mineral land is required to make a substantial expenditure in the way of capital equipment. The owner usually insists upon a contract with minimum royalties for a definite period of time, but the lessee is anxious to continue his operations thereafter for an indefinite period, contingent upon the supply obtained and the availability of a market. It is not unusual for an oil lease to run for a definite period, and thereafter "as long as oil or gas is found in the land in paying quantities." The Supreme Court of Pennsylvania has decided that it is the basis of the owner's remuneration that controls in the construction of these clauses or ones of similar nature. Is payment to be made on a royalty basis? If so, it will terminate after the fact that oil or coal is not being found and produced in paying quantities because susceptible of proof.[21] Is payment to be made on a flat rental basis? If so, the lease continues, or may continue as long as payments are made, even though there is an interval during which the lessee stops operations in the hope of

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[10] 281 Pa. 233 (1924).
[11] 304 Pa. 583 (1931).
[12] Penman v. Mones, 256 Pa. 416 (1917).
[13] 260 U. S. 393 (1922).
[14] Act of May 27, 1921, P. L. 1178, 52 P. S. Sec. 661.
[15] Acts of July 26, 1913, P. L. 1439, 53 P. S. Sec. 2656; and May 4, 1927, P. L. 1160, 53 P. S. Sec. 13286.
[16] 102 Pa. Superior Ct. 447 (1931).
[17] Acts of March 21, 1772, 1 Sm. L. 389, 33 P. S. Sec. 1; and April 22, 1856, P. L. 532, 33 P. S. Sec. 3.
[18] Sheets v. Allen, 89 Pa. 47 (1879).
[19] Robinson v. Pierce, 278 Pa. 372 (1924).
[20] 305 Pa. 527 (1931).
[21] Cassell v. Crothers, 193 Pa. 359 (1899).

a better market.[22] In *Clark* v. *Wright*,[23] the owner leased a tract of land for a term of three years, and so long thereafter as oil or gas was produced from the land and the royalty or rentals paid by the lessee. It provided that the lessee should deliver one-quarter of all petroleum produced, and pay $300 per annum for each gas well, but only while the wells were being operated. On March 19, 1927, some time after the expiration of the definite period agreed upon, the lessee discontinued operations. He paid the last rental on March 19, 1928. On January 17, 1930, the owner declared the lease terminated. The court was of the opinion that this was a case falling within the class where compensation calls for the payment of royalty, rather than a flat rental, and upheld the owner.

It is a cardinal principle of judicial construction, that where a contract provides a mode of rescission, it must be strictly followed. In *Lundberg* v. *Bovaird*,[24] the plaintiff, with two others, purchased all the coal underlying a certain part of a farm, and agreed to pay a royalty on all coal mined, subject to a minimum payment of $300 per year. The agreement provided that in case of default in the payment of the royalty, the grantor should give 60 days' written notice, whereupon the sale should be null and void. No coal was mined from March 15, 1923, to September 18, 1924, a period of about a year and a half, and those associated with the plaintiff surrendered their interests. Without giving the requisite notice to the plaintiff the grantor declared the agreement void and leased the land to another. Plaintiff was awarded damages for his interest in the property. The parties may, of course, waive technical compliance with the contract. In *Titus* v. *Mapel-Sterling Coal Company*,[25] a lease called for a six months' notice of cancellation. Because of an admitted default in the payment of royalty, the plaintiff terminated the agreement by immediate notice, and the defendants ceased mining. Two days later the plaintiff sold to one of the defendants 5,000 tons of coal in place with the stipulation that this should not in any way affect the notice which had been given to terminate the leasehold estate further than the right to remove the coal which had been sold, but it was held that when the defendants ceased mining they were thereafter estopped from insisting upon notice prior to cancellation.

Title to mineral rights may be acquired by adverse possession, and by the same token, may be abandoned. In Pennsylvania, by Act of March 26, 1785[26] no person may maintain a writ for the possession of lands than within 21 years after entry and retention by the adverse possession of another. In order to establish title under this statute, there must be an actual entry and use of the property, such as the true owner might make. It must also be hostile and adverse, continuous and uninterrupted, visible, open, notorious and exclusive. In *Llewellyn* v. *Philadelphia & Reading Coal & Iron Company*,[27] plaintiff's ancestors leased an anthracite coal property from 1873 to 1886, during which time they deposited on a coal bank, together with slate and dirt, what was then considered unmarketable and unsalable coal. They then disposed of the equipment and relinquished the property. During the next 40 years it was operated by the defendant, and the coal on the bank, estimated at 1,500,000 tons, of a value of $3,000,000, was salvaged. Plaintiff claimed ownership, but it was held that defendant's continued, open, notorious, and adverse possession during that period of time was sufficient to vest title. It was contended that inasmuch as the coal had once been detached it was personal property, which could not be required by adverse possession, but the court replied that the conduct of the former lessees so conclusively established an abandonment that no jury should be permitted to guess to the contrary.

Safety Rules

The mining of coal, more than any other industry, is subject to rigid supervision by the state. Pennsylvania has two statutes, the Anthracite Mine Code[28] and the Bituminous Mine Code,[29] both of which deal generally with the inspection of mines, the qualifications and licensing of employes, the duties of employes, mine equipment, rules securing health and safety and the protection of property, regulations concerning the use of explosives, accidents and the care of the injured, and civil and criminal liability. The cases show very few criminal prosecutions, possibly because any person who sustains injury or death as the result of his own violation of either statute automatically takes himself out of the course of his employment, with the consequence that neither he nor his dependents are entitled to compensation under the Workmen's Compensation Act. In addition to a statutory violation, an employe who abandons his employment is not entitled to compensation. In *Kuca* v. *Lehigh Valley Coal Company*,[30] an employe left his regular working place and went to a distant section of the mine and there caused an explosion of gas. In *James* v. *Susquehanna Collieries Company*,[31] a miner entered a part of the mine where he had no duty to perform and died of mine gas poisoning. In both cases compensation was refused. An employe has not abandoned his employment, however, by helping a fellow employe in an adjoining working place,[32] or while going from his place of work to another part of the mine to get his dinner pail during the lunch hour.[33] The same is true of an employe who disobeys instructions incident to his employment, if no statutory violation is involved.[34]

The following cases are typical of violations of the Anthracite Mine Code: In *Shoffler* v. *Lehigh Valley Coal Company*,[35] a "spragger" entered upon a locomotive, started it backward, and crashed into the cars standing on the empty track. The engine upset and he was killed. In *Pokis* v. *Buck Run Coal Company*,[36] a timber man started an engine of a gravity plane, at the end of his shift, and jumped on to ride down to the hoist. He was found dead at the bottom of the plane. In *Mizzer* v. *Philadelphia & Reading Coal & Iron Company*,[37] a miner caused an explosion, which resulted in his death, by lighting a fuse with an open match in a safety-locked section. In *Macenka* v. *Lehigh Coal & Navigation Company*,[38] a miner entered a section of the mine which had been barred by planks, marked "gas," and was killed by mine gas poisoning. In *Walcofski* v. *Lehigh Valley Coal Company*,[39] a miner was forbidden to enter a gaseous section, but disobeyed this instruction and attempted to light a fuse. The gas ignited and he was injured. In *Gima* v. *Hudson Coal Company*,[40] a miner charged 12 holes for blasting. Three were wired so that they would explode at one time, and the other nine were wired separately. He heard but nine reports and returned to the face, where one of the holes was still smoking. Before he could get away the charge in this hole exploded and he was injured. A rule issued by the manufacturer provided that "A safe time, at least 12 hours or more, should be allowed before

[22] Summerville v. Appollo Gas Co., 207 Pa. 334 1904).
[23] 311 Pa. 69 (1933).
[24] 103 Pa. Superior Ct. 45 (1931).
[25] 311 Pa. 529 (1933).
[26] 2 Sm. L. 299, 12 P. S. Sec. 72.
[27] 308 Pa. 497 (1932).
[28] Act of June 2, 1891, P. L. 176, 52 P. S. Sec. 71.
[29] Act of June 9, 1911, P. L. 756, 52 P. S. Sec. 711.
[30] 268 Pa. 163 (1920).
[31] 113 Pa. Superior Ct. 326 (1934).
[32] Haywood v. Henrietta Coal Co., 118 Pa. Superior Ct. 371 (1935).
[33] Blouse v. Delaware, Lackawanna & Western R. R. Co., 73 Pa. Superior Ct. 95 (1919).
[34] Karchut v. Helvetia Coal Mining Co., 110 Pa. Superior Ct. 200 (1933).
[35] 290 Pa. 480 (1927).
[36] 286 Pa. 52 (1926).
[37] 289 Pa. 73 (1927).
[38] 104 Pa. Superior Ct. 591 (1931).
[39] 278 Pa. 84 (1923).
[40] 106 Pa. Superior Ct. 288 (1932), affirmed, 310 Pa. 480 (1933).

returning to a misfire." The code requires the posting of such rules in a conspicuous place in the mine,[41] and directs that they shall be obeyed.[42] Compensation was denied in all of these cases, not only to the employes but to their dependents.

The following cases are typical of violations of the Bituminous Mine Code: In *Floyd* v. *Paulton Coal Mining Company*,[43] a fire boss attempted to make an inspection with an open lighted carbide lamp on his head. It caused an explosion and resulted in his death. In *Kubes* v. *Hillman Coal & Coke Company*,[44] an employe attempted to remove his tools after a cave-in, contrary to the instructions of his superior, and was injured by falling rock. In *Beshnick* v. *Pittsburgh Terminal Coal Corporation*,[45] a miner boarded the locomotive of a passing train at the end of his shift, and was injured. In *Shulick* v. *Logan Coal Company*,[46] the motorman stopped and invited one of the miners to board the motor. A number of men were riding at the time and the foreman saw them, but did not follow his suggestion that they get off and he then instructed the motorman to proceed slowly so that nobody would get hurt. Unfortunately for the claimant he did get hurt, but it was held that he could not recover. In *Lewis* v. *Pittsburgh Terminal Coal Corporation*,[47] an employe was directed to ride on the motor, and, of course, had not taken himself out of the course of his employment. In *Morell* v. *Buffalo & Susquehanna Coal & Coke Company*,[48] the motorman, in the presence and hearing of the mine superintendent, the mine foreman and the fire boss, offered to permit an employe to ride on the motor, and these officials made no objection and gave no instructions to the contrary. Under these circumstances it was said: "The defendant should not be permitted to play fast and loose with the rules—condone their infraction by the officials charged with their enforcement and then set them up as a bar against recovery of compensation by the dependents of an employe killed while traveling from his work in a manner to which they had given their assent and approval."

In a criminal prosecution the Commonwealth would have to prove a violation of the safety rules beyond a reasonable doubt, but this rule is confined to the criminal courts where the accused's responsibility to the Commonwealth is involved.[49] It does not apply to civil issues growing out of the same circumstances. In a claim for compensation the employer, who is usually self-insured, would only have to show a violation of the rules by the clear preponderance of the evidence,[50] although the proof should approximate that required in criminal cases.[51] The forfeiture of compensation under the foregoing circumstances has resulted in a good deal of resentment, but it has undoubtedly decreased the number of accidents and property loss. Attempts have been made to change the law but thus far without success, other than for infants employed in prohibited occupations. They or their dependents receive double compensation.[52] It is not likely that this modification will be extended, by judicial construction, to include the deliberate violation of a safety rule.

Labor Disputes

Labor problems are by no means peculiar to the mineral industries, although possibly more acute. This is due largely to aggressive organization and leadership. The primary problem of the laborer involves the right to participate in a labor union. In a recent case before the Supreme Court of Pennsylvania certain employes agreed, in a contract of employment, not to join or retain membership in a union.[53] The legality of such an agreement had not only been upheld by that court, on a previous occasion,[54] but also by the Supreme Court of the United States,[55] and the same decision was not unexpected. It served, however, to bring the matter to the attention of the legislature and the next regular session adopted a resolution declaring such contracts contrary to public policy,[56] partly in response to the trend of Federal legislation, and partly because of the following dissent by Mr. Justice Maxey:

> "These essentially coercive anti-union contracts are socially wrong and legally indefensible. They are a vestige of economic Bourbonism—a cult that is not outmoded. The social philosophy of industrial absolutism is, I believe, headed for as complete rejection in this country as was the social philosophy of the Dred Scott decision in 1856. Those employers who frankly recognize the right of employes to unite and to make their united voices heard in matters affecting the conditions of their employment are, according to my view, not only in harmony with the spirit of the age but are showing farsighted self-interest, for reactionism always begets radicalism."

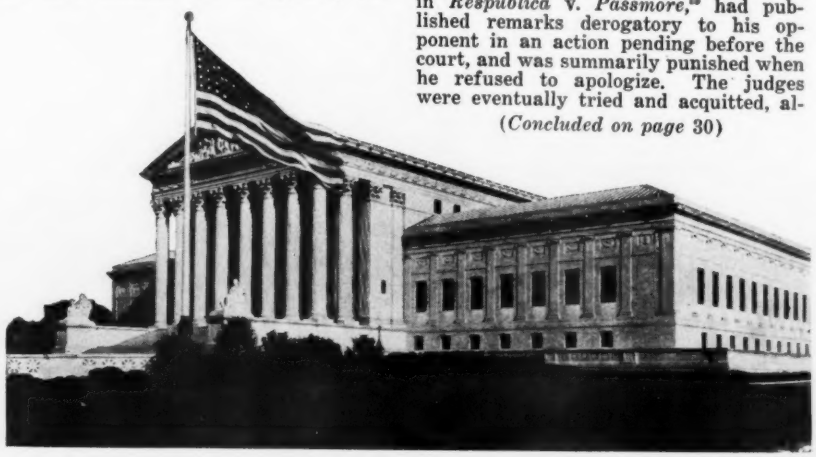
In recent years organized labor has become somewhat embittered by the indiscriminate use of the injunction, and by the loose methods not infrequently resorted to in an effort to secure the intervention of the courts. Particular cause for complaint was the granting of temporary injunctions based solely on sworn affidavits, which were so broad as to restrain legitimate union activities. In 1931 the legislature of Pennsylvania moved to clarify the law in this respect by stipulating that a temporary restraining order, based solely on oath or affirmation, might not be granted for a period of more than five days unless a regular hearing had been instituted within that period of time; and that a temporary or permanent injunction might not issue except after a full hearing in open court, and then only after findings of all of the following facts by the court: (a) That unlawful acts have been threatened or committed and will be executed or continued unless restrained. (b) That substantial and irreparable injury to complainant's property will follow unless the relief requested is granted. (c) That complainant has no adequate remedy at law. The act further provides that no temporary restraining order or temporary injunction may issue unless the complainant files a bond to indemnify those enjoined, including a reasonable attorney's fee, where the relief sought is subsequently denied.[57]

Further cause of dissatisfaction arose because of the practice of the courts in summarily punishing for contempt, without a trial by jury, those persons who were found guilty of violating the decree, where the acts complained of were not committed in the presence of the court or so near as to interfere directly with the administration of justice, or in other words, for indirect, as distinguished from direct criminal contempt. In discussing this problem it was very recently said by Mr. Justice Maxey:

> "That the American people have resented the assumption by certain judges of 'inherent power' to proceed summarily against persons for alleged constructive contempt of court is a matter of history. One hundred and five years ago Federal District Judge Peck imprisoned and disbarred a lawyer for the latter's criticisms of the former's opinion. For this he was impeached. At the trial the defense was that the action complained of was based on common law precedents. Twenty-one Senators pronounced the judge guilty and 22 not guilty."[58]

Not long before that time certain judges of the Supreme Court of Pennsylvania had also been impeached under similar circumstances. The defendant, in *Respublica* v. *Passmore*,[59] had published remarks derogatory to his opponent in an action pending before the court, and was summarily punished when he refused to apologize. The judges were eventually tried and acquitted, al-

(*Concluded on page* 30)



[41] Act of June 2, 1891, P. L. 176, art. XII, rule 54, 52 P. S. Sec. 297.
[42] Ibid. rule 29, 52 P. S. Sec. 424.
[43] 94 Pa. Superior Ct. 1 (1928).
[44] 96 Pa. Superior Ct. 340 (1929).
[45] 110 Pa. Superior Ct. 156 (1933).
[46] 113 Pa. Superior Ct. 551 (1934).
[47] 113 Pa. Superior Ct. 540 (1934).
[48] 103 Pa. Superior Ct. 315 (1931).
[49] Floyd v. Paulton Coal Mining Co., 94 Pa. Superior Ct. 1 (1928).
[50] Gima v. Hudson Coal Co., 106 Pa. Superior Ct. 288 (1932), affirmed, 310 Pa. 480 (1933).
[51] Puza v. Philadelphia & Reading Coal & Iron Co., 98 Pa. Superior Ct. 139 (1929).
[52] Act of April 14, 1931, P. L. 36, 77 P. S. Sec. 672.
[53] Kraemer Hosiery Co. v. American Fed. of Full Fashioned Hosiery Workers, 305 Pa. 206 (1931).
[54] Flaccus v. Smith, 199 Pa. 128 (1901).
[55] Hitchman Coal & Coke Co. v. Mitchell, 245 U. S. 229 (1917).
[56] Act of May 24, 1933, P. L. 995, 43 P. S. Sec. 205.
[57] Act of June 23, 1931, P. L. 926, 43 P. S. Sec. 202-204.
[58] Penn Anthracite Mining Co. v. Anthracite Miners of Pa., 318 Pa. 401 (1935).
[59] 3 Yeates 441 (1802).

Of All Things . . .

There's a chance for an enterprising man to make millions by selling a sure-fire memory course which would enable politicians to keep in December pledges made in July. . . .

If coal operators can only hang on for another 15 or 20 years everything will be rosy, providing the Government doesn't take their properties away from them . . . Official surveys just made disclose that the known oil reserves will last 15 years . . . that the known coal reserves will last the Nation for several thousand years. . . .

The old quip about not putting off until tomorrow what you can do today is particularly appropriate these days . . . By tomorrow there will either be a law against it or the taxes on it will be increased. . . .

If law-making is a record to point to with pride, the New Deal eclipses them all . . . The twenty billion dollar Congress which just finished its labors put 1,700 new laws on the statute books. . . .

The rest of Washington may be interested in the campaign . . . But the Justice Department has its hands full with other problems . . . A battery of legal experts is now engaged in preparing defense for at least three new laws—chain store, Government contracts, taxes . . . All are expected to be brought into the courts . . . No wonder the lawyers love the New Deal. . . .

We can't figure Messrs. Farley and Hamilton . . . The former says the Democrats will carry 46 states; the latter counts 42 states as safely Republican . . . We always thought there were only 48 states in the Union. . . .

Just about this time of the year the country becomes a land of promises . . . And about six months from now it's a land of broken promises. . . .

The President insists that it's a wise course to try every method, abandoning what proves bad . . . What will happen when all the schemes have been tried? . . . A Western editor suggests that the best plan is to give the country back to the Indians. . . .

The New Deal has plenty of alphabetical bureaus. . . . Right now Mr. Tugwell and his aides think H_2O would outrank them all. . . .

There's one nice thing about formation of a new third party. . . . They usually finish third. . . .

Who is right, anyway . . . the President denounces economic royalists and Lemke promises to make every man a king. . . .

One way the new Congress could earn the blessings of posterity would be to levy a confiscatory tax on excess prophets. . . .

Dr. Townsend says that even the youth of the Nation are all for his plan. . . . Well, why not. . . . Most of them are smart enough to realize that they'll be old some day; the others are living on dad and mother now. . . .

Cheering news . . . July deficit is one-sixth as large as last year's. . . . But if arithmetic hasn't been plowed under, we'd like to know how a country which spends a dollar every time it takes in 46 cents can ever get away from a deficit. . . .

We expect some smart Congressman to make himself a lot of votes by advocating a bonus for the veterans of the WPA. . . . After all, it's been no fun to get $55 a month for raking leaves during the depression war. . . . The statesman who will promise a bonus of $2 a day for each day's service on the WPA front may be the next President. . . .

SILVER at the Crossroads

F. C. GILBERT*

WAR inflation and post-war depression have played havoc with commodity prices, international trade and exchange, government budgets and currencies.

Farmers unable to dispose of their surplus crops; factories closed for lack of customers; unemployment widespread; fluctuating exchange rates and uncertainty in future business transactions; government revenues everywhere inadequate to meet ordinary and extraordinary expenses; coinage depreciated and paper money made inconvertible by limitation or abandonment of the gold standard.

Economists and financial experts agree —insofar as they ever agree on anything—that some if not most of these disorders in the economic system can be remedied by monetary reform. Unfortunately, the financial "wizards" are far from being in accord as to measures which might afford relief. It is not surprising, therefore, that "experiments and panaceas," new and old, are rampant. A generation ago the "silver cure" for low prices and low wages, and general maladjustment of distribution of wealth, was a political issue. The "gold cure" prevailed. Since the great depression "silver" has been revived by the Silver Purchase Act of 1934.

Has "silver" anything to offer today to our distracted currency systems? Is it just another "racket" as asserted by Professor Neil Carothers of Lehigh? Here in Montana where twenty percent of the United States silver has been mined, we are naturally more than academically interested in silver, at least in the prospect of higher prices for the white metal.

It is obvious that the output of the wheat farmer is essential to the life of the community, but it is debatable whether interference with the normal workings of the law of supply and demand for wheat is advisable. On the same theory, apparently, silver as a commodity should be allowed to find its market wherever and whenever there is a demand for it.

Whatever be the merits or demerits of the principle of government assistance to private business, this article makes no plea whatever for direct assistance to the silver mining industry for an adequate price for its product, or even as a means of putting men to work, laudable as these objectives might be. The real "silver question" should be discussed from the standpoint of public interest alone. If the purchase of silver now being made by the United States Treasury is to be of benefit alone to the miner the program is not likely to be continued. The silver policy of the Administration has been severely criticized by both friends and foes of silver. On the one hand the "silverites" complain that world silver prices have not been sufficiently raised; on the other hand the economists and financial writers claim that nothing has been accomplished by the purchase of 762,000,000 ounces at an average price of 57c per ounce and a total cost of $438,000,000.

"The Quantity Theory of Money"

There is no approved method of calculating or estimating the quantity of money in the form of gold, silver, bank notes, or of the credit forms of money like bank checks, government bonds, etc., required by a nation in relation to the total population, number or value of business transactions, bank loans and domestic and foreign debts.

It is, however, most essential that the money of the community be "good" money, i. e., money which is acceptable to everybody. Otherwise "Gresham's Law" will operate to drive the superior kind of money out of circulation, through exportation or hoarding, leaving only the inferior money in l e s s e n e d supply. Simply stated, the amount of money a nation needs is that which will maintain its price level in equilibrium with that of other nations and the problem of the day is one of distribution of money between countries.

Economists generally show some tendency to agree that, other things being equal, the more money in circulation the higher the price of goods, and conversely, the less money available for the purchase of commodities the less the seller receives for his wares. In addition, money serves to buy services and to pay interest charges on capital borrowed. The amount of credit is another factor in the money-price ratio as well as the velocity of circulation of money and credit.

Prices of manufactured articles are, of course, affected by technological advances and volume of sales, etc., which are more or less independent of the money side of the equation. Admitting that it is most difficult to evaluate all the factors at work on prices, there is a good deal of evidence that, in the long run, the general price level bears a more or less definite relation to the volume and velocity of money and credit. It is on the basis of the "quantity theory of money" that proposals to regulate prices by the "commodity dollar" have been made, the value of the dollars to be governed by the "general commodity price index" entirely divorced from metallic "backing," equalizing or stabilizing the unit of value for an unvarying purchasing power. If the payment of wages and salaries and all the other duties which money has to perform could be kept in equilibrium with commodity prices, we would have an ideal monetary system. It is doubtful whether any purely "managed currency" of this kind or any other kind in the United States would be administered without pressure, political or financial. Numerous examples of these influences not in the public interest might be cited. Under the circumstances here in the United States it is probable that we must forego the advantages of a monetary system of perfect flexibility for a currency based on gold-silver supplemented by government and bank loans stressing the elements of simiplicity, stability, and freedom from inflationary or deflationary influences either from Washington or Wall Street.

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Monetary Gold Stocks

According to the Annual Report of the Director of the Mint for 1935, at the end of 1934 the monetary gold stock of the United States amounted to eight and a quarter billions of dollars (gold at $35 per ounce). This was 37.4 percent of the total world gold monetary stock of 21.8 billion dollars. During 1935 gold poured into the United States, nearly one and three-fourths billions of dollars being added to the gold stock from shipments of European "hoards" and by foreign investments in United States securities. The monetary gold stock of the United States at the end of December, 1935, had risen to the record-breaking figure of 10.1 billions of dollars. Comparative world figures being available only to the end of 1934, we find that the next largest gold stock at that time was that of France, 5.4 billion dollars (34.7 percent of the world total); Great Britain held only 1.6 billions, or 7.3 percent of the total. These three countries, therefore, had nearly 70 percent of the world's monetary gold. The per capita gold stocks of these three countries at the end of 1934 was:

United States	$ 65.38
(End of 1935, $80.50)	
France	129.95
Great Britain	33.39

It is worthy of note that Great Britain, the first nation to adopt the gold standard, its champion for over one hundred years, and in control at the present time of one-half of the annual mine production of gold, should require such a small amount of the yellow metal to transact its business. Undoubtedly the high development of English banking and the skill of its management of credit is the explanation of this apparent deficiency in gold reserves.

The United States and France, therefore, have accumulated nearly two-thirds of the world's monetary supply. Just how much of this gold is really necessary as a base for our currency and credit, both for our national obligations and for bank credit is difficult to say. It will be recalled that purchases by the United States Treasury at $35 per ounce were undertaken in the expectation that commodity prices would be raised by this method of devaluation of the United States dollar. Whatever may or may not have been the advisability of taking this step to revalue the dollar in terms of foreign exchange, it cannot be considered the equivalent of adding to the total amount of money in circulation and therefore increasing the money side of the equation P Q equals M V (where P=price index, Q=quantity of goods, M=volume of money, and V=velocity of circulation).

Monetary Silver Stocks

The director of the United States mint lists the monetary silver stocks of the world at the end of 1934 as follows:

	Millions of Dollars	% of Total	Per Capita
United States	$ 1,064	16.6	$ 8.45
Canada	47		4.39
Mexico	98		5.68
Belgium	20	4.7	2.48
France	39		.92
Netherlands	95		11.44
Germany	539	8.4	8.24
Great Britain	432	6.7	9.27
Spain	221	3.4	9.13
British India	1,951	30.4	5.37
China	802	12.5	1.78
Japan	408	6.3	4.23
Other Countries	706	11.0	
Total World Silver Stocks	$ 6,423	100.0	$ 3.19
Total World Gold Stocks	21,804		10.91
World ratio gold stocks to silver stocks, 2.94:1.			

A number of significant facts are brought out by a study of the table.

1. The proportion of the total value of world monetary gold stocks to silver stocks is approximately three to one, the same ratio as that authorized by the United States Silver Purchase Act of 1934.

2. British India has the largest monetary silver stock, United States the next largest. Chinese monetary silver stocks are small per capita ($1.78) but a large quantity of silver in China is in the form of bars and other non-monetary forms of silver.

3. The per capita silver stocks of Germany, Great Britain, Netherlands and Spain are very close to that of the United States, varying from $8.24 to $11.44.

The Annual Production of Silver

In discussing the silver question pro and con with bankers and others not connected with the mining industry, the author has found an almost unanimous belief that there is a vast potential unmined supply of the white metal which, with higher prices, will flood the market.

Past silver production figures show little if any relation of silver production to silver prices. The reason for this lies in the fact that that for many years 75 percent of the silver output has been a by-product of copper, lead and zinc.

It has been estimated by Mr. Francis H. Brownell, chairman of the board of directors of the American Smelting and Refining Company, that the world annual production of silver for the next five years will be approximately 225,000,000 ounces.

The problem of silver supplies in relation to prices is rather one of remelting of the visible and invisible currency and "hoards" of silver in existence.

The Relation of World Trade, Prices, and Gold and Silver Production

Since gold and silver enter into the monetary systems of the world through the channels of trade, their relative scarcity or abundance from time to time might be assumed to have affected price levels. In order to test this hypothesis, the author has plotted a number of curves on a logarithmic scale, including world commerce, gold and silver production and commodity prices since 1800.

The commodity price index on the chart is that of the United States, which is considered to be an approximate measure of world prices.

An analysis of the chart shows the following facts:

Up to 1850 the annual production of the precious metals did not keep in step with the increase in the world trade. With the exception of the short period 1835-1840 prices were falling.

Beginning with 1850 precious-metal production, especially gold, sharply advanced, but fell off gradually until 1890. World commerce from 1850 increased more or less in proportion to the precious-metal production, which might explain why the price level between 1850 and 1860 did not advance more rapidly.

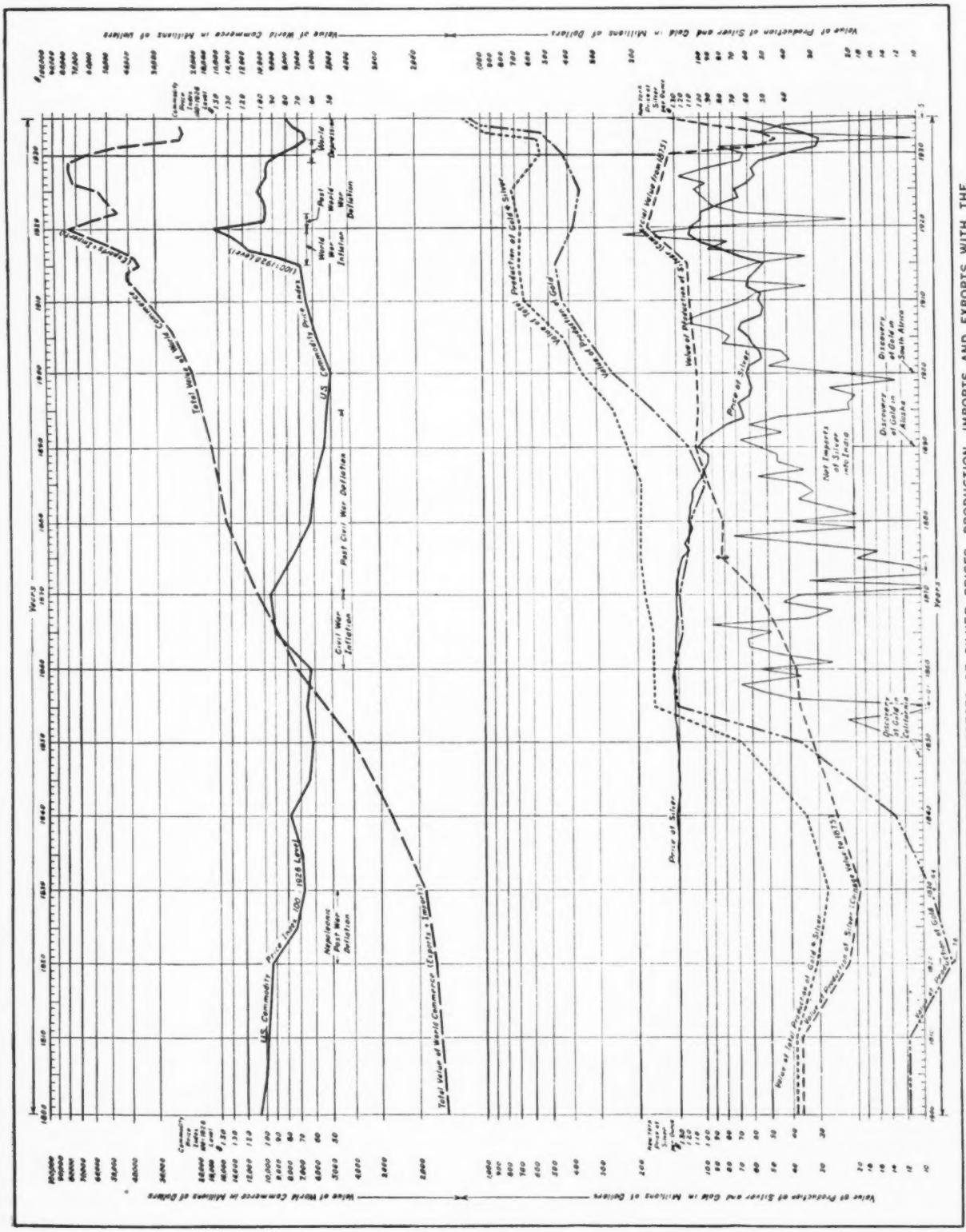
From 1860 to 1870 the rise in prices was undoubtedly due to paper money and other forms of inflation brought about by the Civil War.

In the early 70's most of the great commercial nations demonetized silver. It will be noted that prices of commodities declined along with the relative shortage of gold.

The World War with its vast inflation brought commodity prices to high records, and stimulated world trade to high peaks, unbalancing all strictly economic factors.

Since the World War trade has fallen off to very low levels. Along with this slump in trade, commodity prices dropped up to the year 1932. It is significant that the general abandonment of the gold standard was accompanied by a moderate rise in the price level.

It might be argued that the present world gold production is adequate for existing trade requirements. If world gold stocks were equally distributed this might well be true. Under a general silver purchase policy gold hoarding nations would dispose of some of their gold surpluses. At least this is the underlying theory of adding silver to gold stocks. It is most interesting to observe that comments from financial institutions on this phase of the United States Silver Purchase program are very much opposed to any release of gold by this country. Possibly the explanation of this attitude is a general disinclination by bankers generally to accept any


Value of World Commerce in Millions of Dollars
Value of Production of Silver and Gold in Millions of Dollars
Years
U.S. Commodity Price Index (100 = 1926 Level)
Total Value of World Commerce (Exports + Imports)
Napoleonic Post War Deflation
Civil War Inflation
Post Civil War Deflation
World War Inflation
Post World War Deflation
World Depression
U.S. Commodity Price Index
Total Value of Production of Gold & Silver
Value of Production of Gold
Price of Silver
Value of Production of Silver
Net Imports of Silver into India
Discovery of Gold in California
Discovery of Gold in Alaska
Discovery of Gold in South Africa

LOGARITHMIC CHART SHOWING VARIOUS ASPECTS OF SILVER PRICES, PRODUCTION, IMPORTS AND EXPORTS WITH THE VALUE OF GOLD PRODUCTION DURING THE PERIOD 1800-1935 INCLUSIVE

ANNUAL PRODUCTION OF GOLD AND SILVER
Ratio of production, average London price of silver
by 5-year periods, 1861-1935

Calendar Year	Gold Fine Ounces	Silver Fine Ounces	Ratio of Production Silver to Gold		Average Price per Ounce London
1861-1865	29,747,910	177,009,860	6.0		$1.34
1866-1875	31,350,430	215,257,915	6.9		1.33
1871-1875	24,942,289	522,721,630	20.9	Period	1.29
1876-1880	26,700,852	352,997,260	13.2	of	1.16
1881-1885	24,699,157	427,845,746	17.3	Relative	1.11
1886-1890	27,306,411	544,539,155	19.9	gold	.98
1891-1895	39,412,823	787,905,737	20.5	shortage	.79
1896-1900	62,234,698	828,466,521	13.3		.62
1901-1905	78,033,650	839,977,041	10.8		.57
1906-1910	104,857,875	986,257,581	9.4		.59
1911-1915	112,816,749	1,012,374,690	8.9		.57
1916-1920	95,065,613	923,232,689	9.7		1.04
1921-1925	86,961,937	1,111,809,220	12.8		.74
1926-1930	98,253,003	1,275,379,860	12.9		.54
1931-1935	131,211,337	921,158,382	7.0		.43
Total and average 75 yrs.	973,594,734	10,926,933,287	11.2		Av. .87

attempt to regulate price levels by monetary adjustments.

The chart shows a general agreement between commodity and silver prices. If, for example, the countries of the world had used silver money exclusively on the basis of its commercial value the general commodity price curve apparently would have been much flatter or more constant than price curves based on the gold standard.

CONCLUSIONS

A discussion of the monetary use of silver should answer the following questions:

Question No. 1. With present gold production exceeding a billion dollars per year, is it desirable or necessary to increase the monetary stocks of the world by further utilization of silver as contemplated in the United States Silver Purchase Act of 1934?

Answer: The importation of 1,740,000,000 dollars in gold into the United States in 1935, much of which was hoarded gold from Europe, complicates the United States' silver program. It is frankly admitted that under the present disturbed state of affairs in Europe, further movements of gold to the United States will continue. This increased gold stock in the United States therefore might be used as a measure of inflation without adding silver. Under existing conditions, it is not likely that the final objective of a three-to-one ratio between gold and silver values will be quickly reached. If the silver problem is directed to stabilization of silver prices rather than a rapid increase in silver prices, the time element is not so important.

According to Mr. Francis H. Brownell, the United States should not exhaust its buying power before a general stabilization of world moneys is achieved. In other words, the silver purchase program should "make haste slowly," awaiting such time as it is able to distribute its gold stock more equitably.

Question No. 2 Should the price of monetary silver be fixed in relation to gold and if so, at what ratio?

Answer: Although for the past 75 years the ratio in ounces of silver production to gold has been in the neighborhood of 11 to 1 and a long time ratio more nearly the classic "16 to 1," the monetary use of silver has been so long neglected that the advisability of the United States attempting to establish a definite price within the very near future is questioned. Mr. Brownell considers that the world price of 60c to 65c per ounce offers better prospects for monetary silver in the long run than the theoretical 16 to 1 price of $1.29 per ounce. Therefore, the question of a fixed ratio between gold and silver might better be left to international agreement.

Question No. 3. Is it advisable for the United States to undertake the rehabilitation prior to international agreement?

Answer: The history of monetary conferences in the past does not give very much hope for concerted action without some radical change in the relative position of the participants. It seems to the writer that an ounce of demonstration of the determination of the United States to reestablish silver is worth a ton of international conference.

Question No. 4. Should the market for silver be left to the workings of a normal supply and demand?

Answer: Handy & Harman, 69-year-old New York firm, chief United States dealer in silver, state in their "Review of the Silver Market for 1935," "No permanent good can come from increasing and supporting the price level of silver at a point above that warranted by the economic condition of the world market." By world market is meant the coinage of the great commercial nations, the demand for silver in the arts, and the silver purchases of India and China. In late years silver coinage has fallen to practically nothing, the arts take less than 20 percent of newly mined silver. India for many years, as plotted on the chart, has been the minstay of the silver market. With India on a gold or sterling basis and selling its accumulated monetary silver from time to time in large quantities, and war-torn China unable to purchase silver through its diminished exports, it might be said that silver has been a drug on the market. Consequently a large proportion of the available silver in the world has been "picked up" at low prices by speculators in New York, London, Bombay and Shanghai. Before the United States began its silver purchases, silver had dropped to a low of 25c per ounce in December, 1932. Although it is true that silver-standard countries have been able to make certain adjustments to this great depreciation in the value of their currencies, silver "on the loose" makes international exchanges with these countries more or less of a lottery. As far as the writer can determine from study of the numerous articles appearing in the financial press against the United States silver policy, the criticism has been mainly directed toward the rise in the price of silver rather than the support which has been given to the market.

Question No. 5. What will be the final effect on commodity prices of adding silver to the United States monetary stock?

Answer: Handy & Harman on this point state, "There is no evidence that the large accretions of silver in the United States have effected either the currency or the domestic price level." This is not surprising in view of the large simultaneous additions to our stock of gold. Eventually a better distribution of gold among the nations must be arranged, no doubt through an international monetary conference covering silver as well as gold. With the United States dominating both the gold and silver markets of the world, possibly such a future conference will lead to a better understanding. It is not expected that, in the long run, price levels can be substantially affected by the action of any one nation. The situation would be certainly remedied by permitting a steady outflow of our excess gold, difficult as it might be of accomplishment as long as Europe and Asia are disturbed by war and rumors of war.

Finally it may be asked whether it is wise at this critical time to make any attempt to raise silver prices or to stabilize the silver market.

It seems to the writer that the world-wide tendency toward strictly paper or "managed" currencies is dangerous in the extreme. The present United States silver policy offers by far a greater measure of safety to the monetary structure than inconvertible paper or a general dependence on public and private debts in the form of government bonds or commercial loans.

The extension of the metallic base to include silver will eventually lessen the "strain" on gold and will tend to freer movement of gold between nations.

It is likely that the program will take

(*Concluded on page* 34)

ACCIDENT PREVENTION at Wheelwright, Kentucky, Inland Steel Co., Inc.

By G. C. SUTHERLAND*

THERE is no phase of our operation that is given more attention than accident prevention.

The mine was opened by our predecessors in title in 1916 and was acquired by our company in April, 1930.

Since the Inland Steel Company purchased the property, a new surface plant was built, new steel mine cars purchased, and the mine rehabilitated both inside and outside. Production now averages about 4,500 tons per day.

We mine the Elkhorn No. 3 seam in the Big Sandy Elkhorn Field. The coal varies in thickness from 36 to 48 in. and averages about 44 in. A small area of the seam is overlaid with sand rock top, but by far the greater area is overlaid with a fragile slate top. Where we have this draw slate, which runs from 3 to 48 in. in thickness, we frequently encounter "kettle bottoms" and "horsebacks" which have been responsible for the most serious accidents.

Because of the many natural hazards, the accident experience has not always been favorable, but greater safety will always be one of the major objectives at Wheelwright Mine. A definite safety program was outlined immediately after Inland took over the property, and it has been carefully followed.

Safety education has been stressed. Once each week meetings are held with the supervisory force, and each month general safety meetings are held in the theater which practically all the men attend. Because of the large number of men, we must of necessity hold two general safety meetings each month, which are held on the same day. At these meetings the accidents of the previous month are analyzed and discussed. Accidents occurring at other places are also described, and the meetings are occasionally addressed by men from the State Department of Mines, the U. S. Bureau of Mines, and from other coal companies.

At every meeting the employes are given an opportunity to talk, and they frequently respond. Local musicians usually furnish the music; and at the end of each meeting an interesting picture is shown.

During the school term a special meeting for the school children is held on the same day as our general safety meeting, after the close of school; and after brief safety talks, a picture is shown.

View of Tipple, Conveyor Line, Cleaning Plant, Head House, Loading Terminal of the Aerial Tram, and Slate Disposal Plant

Discipline is an important part of the program, and no one is immune; but while that is true, it was and is recognized that perhaps more could be accomplished by building up a genuine interest in safety among the men and in developing a spirit of cooperation between the supervisory force and the men. With that objective in mind, the company did everything it reasonably could do to convince the men it was sincerely interested in their safety and welfare and did contribute its share in improving working and living conditions. The company has insured all of its employes under a group insurance policy, a small part of the premium being paid by the employes.

Each month a group of 12 men is selected from the workmen which forms what is known as the safety council. These men meet with the safety inspector and collaborate with him in accident prevention work. The council, being

View of Model Working Place where men are instructed before being assigned to work

* Safety Inspector.

composed of men from the working force, is able to offer practical and valuable safety suggestions which otherwise might not be presented. The meetings of the council with the safety inspector are not attended by any operating official unless his presence is requested. When any recommendations of the council cannot be carried out, a full explanation is made so that the council will realize its suggestions have received careful consideration.

First a standard plan of timbering was adopted which is still being followed although some slight modifications have been made in the original plan. Then a set of safety rules and operating standards was adopted. The supervisory force is instructed to do everything possible to make safe and competent workmen through instruction, advice, and individual encouragement and that it is expected to hold before the men at all times high standards of workmanship and to help the men to reach such standards. When violations occur, discipline is applied even to the supervisory force.

Safety bulletins are posted both inside and outside the mine. In the program of safety education, we do everything possible to keep the men thinking constantly about their and the safety of others while at work. This is stressed particularly by all officials visiting the working places and at all meetings. As anyone enters a miner's working place or as he approaches any group of men, he is greeted with the salutation "Be Careful!".

This year, to further promote the interest of the men in safety, the company is offering a safety trophy to the operation (ore mines, limestone quarries and coal mines) that makes the best safety record in 1936 based upon certain standards.

All men must pass a physical examination, and just in by the mine, opening off of the empty track, there is a model working place where all new men are fully instructed as to their work by the safety inspector before they are assigned to work by the mine foreman. The men must have a full complement of tools before reporting to the safety inspector.

All men wear safety hats and hard-toe shoes. Carbide lamps were replaced with electric cap lamps several years ago. There are a number of miscellaneous safety devices which the men are required to use, such as goggles, safety chains for mine cars at the working face, hooks for the brakemen in coupling cars, permissible powder, incombustible stemming, and respirators which I am merely referring to without any detailed description of their use. Just recently we have equipped all air drills, used in rock work, for wet drilling in order to reduce the danger to the operators from exposure to rock dust. The drill men are also required to use respirators.

A careful investigation is made of each accident following which a detailed report is made even though the accident may have occasioned no loss of time. Accident reports are prepared by the section foremen on whose section the accident occurred. Each report is also signed by the mine foreman and the safety inspector showing that they have made an investigation of the accident.

No injured man can return to work until the doctor has certified that he has recovered sufficiently to resume his labors with safety. The "return to work" slip must first be

Mine Rescue Team

The men all wear hard-toe shoes and skull guard hats. This picture shows some of this equipment which prevents serious injuries

presented to, and signed by, either the assistant superintendent or superintendent before the foreman may accept it. This routine affords the several officials an opportunity to discuss the accidents with the injured men before they return to work.

While the mine is non-gaseous, a modern mine rescue and first aid station is maintained, which is equipped with 5 McCaa 2-hour oxygen breathing apparatus, 10 Burrell all-service gas masks and 1 HH inhalator, flame safety lamps and other miscellaneous equipment including a Burrell mine gas analyzer, an electric methan detector, and a dust testing outfit. The last mentioned equipment is used at regular intervals by the safety inspector in making tests.

A fire station has been built just in by the mine opening off of the empty track where is located a chemical fire truck and a hand fire extinguisher. There is posted at this station, under glass, rules covering procedure in case of mine fire or explosion. At each section foreman's shanty there is a hand fire extinguisher and a metal canister containing stretchers, blankets, etc.

The movement of all trips is directed by dispatchers; telephones, and block signals are used in the handling of trips. Trip lights are used by all locomotive and cutting crews as well as by anyone handling a locomotive.

The mine is fully equipped with d.c. automatic reclosing sectionalizing breakers, and in each heading there is installed a sectionalizing trolley switch.

One hundred percent first aid training is given each year under the direction of the safety inspector. All officials and motormen are required to carry first-aid pocket packets; these are also carried by a number of other men.

A modern bath house has been provided where the men are required to check in and out each day. In addition to the "in" and "out" clocks, there is a special clock which the men are required to use in stamping on the reverse side of their cards whether or not they have been injured.

An adequate force of section foremen is maintained so that all men can be visited each day and their work and safety properly supervised. Equipment reports are sent to the office every month by the section foremen which lists all of the tools of each loader. These reports enable us to see that the loaders always have a full set of tools.

In February, 1935, we received a certificate of honor from the Joseph A. Holmes Safety Association for having worked 1,780,562 man hours and producing 1,021,787 tons of coal without a fatality; and while our accident experience shows a marked improvement as compared with the past record, we are not satisfied with our record, and the old saying that "Eternal vigilance is the price of safety" still holds.

Developing SAFE MINERS at Red Parrot

By GEO. EDW. DAUGHERTY*

SAFETY is and should be everybody's business, but the trouble we have experienced is that the average workman and members of his family have not been as much interested as they should be, so the problem that presented itself was to find ways and means of creating greater interest. A well known safety director was employed and given full power to handle the situation in his own way, to the extent at least that he was free to give safety his special attention, to hold it as his first duty, to organize and crystallize sentiment regarding it, to urge the safe way, to talk safety on every occasion, to go into the remote cause of accidents, etc. To function as an advisor and report to the highest operating official. The safety director began by making detailed inspections and elaborate reports of every phase of operation, the accident reports for several years past were carefully reviewed and classified. Accidents were tabulated under ten different headings, such as head injuries, eye injuries, foot, hand, arm and leg injuries, etc., also ten different causes were tabulated. In this way we learned what caused the accidents, where they occurred, what the injured was doing, who was to blame, the nature of the injury, etc.

The records showed that 90 percent of the accidents were caused directly through trivial errors or mistakes in judgment, not because of any special hazard, but because the one injured was inattentive, thoughtless, neglectful. A fall of face or rib coal caught one while he was hurrying to get his car loaded. A piece of slate fell on another who intended to take it down as soon as he could find time. Another blocked a car on a grade with a chip of wood and was squeezed between the car and coal face, etc.

The history of coal mining is a repetition of such sad occurrences. In nearly every instance the injured man failed to live up to the requirements of the situation, somebody did something the wrong way, ignorance or neglect on the part of the injured or the boss or both was plainly evident. Likewise the remedy was just as apparent, personnel improvement, more capable men were needed in both workmen and supervisors.

The management were in perfect accord for they have always believed the foremen can train their men to be careful or they can allow them to be careless and that we find the men as we find the boss and we find the mine as we find the men.

The First Step

The first step taken was to have all employment handled by one man, where applicants could be interviewed to determine their fitness for the jobs they sought, if the new man had the appearance of making a satisfactory workman he was sent to the medical examiner for physical examination, if he passed he was registered in the employment office, where he received a list of examination questions of company rules and regulations and a copy of the state mining law, he then reported to the proper foreman who gave him the necessary preliminary instructions and registered him for a course of six special lectures on safety and first aid to the injured. Tests in company rules and regulations included in the lectures.

The new man was then taken to his place of work and given final instructions. In nearly all cases the coal loader is given a place with an old miner till he shows he can be trusted to work alone. *The object of this procedure is to get the right man for the job, realizing that a misfit is a high accident probability.*

The Second Step

Our next step was to promote the right mental attitude. In this good housekeeping was considered of first importance, knowing that a dirty disorderly environment never created a good mental attitude and that good housekeeping is merely one phase of good management. Orderly habits indicate orderly thinking; good arrangements come out of good planning, the worker is more influenced by what he sees than by what he is told. If he sees well kept bulletin boards, clean shops, clean bath houses and orderly yards, he is somewhat impressed. If traveling ways, sidetracks, mouth of entries, doors and other shifting places are kept free of loose materials and these points whitened and lighted, explosives safely handled, cars safely blocked, motor trips handled with care, first aid stations and surroundings attractively kept, he will be further favorably impressed. The coal loader is deeply impressed when he finds the working places on either side of him systematically timbered, caps well placed, posts set plumb, explosives safely stored, track well laid, coal faces and brows squared up, cars at face safely blocked, all timber and tools kept in place instead of scattered about.

The miner finds it much easier to be careful in a place or section that is kept in order. Herein lies our greatest hopes for the improvement of our workmen.

Safety Education

We have been convinced that education for safety is of first importance, particularly when we admit that education is not only knowing but doing, but to train the men who follow mining to take care of themselves, to imbue them with a sense of responsibility requires mutual understanding and the closest cooperation between safety department, foremen and workmen.

Our first step in raising the standard of the men in direct charge of supervision, comes through requiring all foremen to attend the foremen's conference. No ordinary excuse being accepted for being absent.

Every function of management is discussed in these meetings and accident prevention is an important function. It is just as much of an indictment against the face boss to have a man hurt as for any other failure or lack of ability along any other line.

* Director of Safety, the Red Parrot Coal Co.

When a foreman is employed his training becomes almost continuous, the foreman wants to make good and the management wants him to succeed and they do everything they can to help him get along. *When a foreman fails it always costs the company a lot of money.*

Red Parrot has a definite company policy covering all phases of safety and production that must be strictly carried out, this fits ideally into the plan to make the face boss responsible for everything in his section, it has given highly satisfactory results.

The boss and workmen alike know the company rules and what is expected, each man knows he will be well paid if he abides by them and will be laid off if he doesn't. *The only time an employe ever hears of discipline is when he fails to follow company rules and regulations, this is very seldom.*

Our men all wear safety shoes, safety hats and electric cap lamps, although the mines have no history of gas.

The first real step toward safety at the working faces is in the selection of the man who is going to supervise the work, we depend so much on the face boss, that we have built our safety program around him and others in direct charge of supervision.

All inspections, whether by foremen, coal inspectors or safety director are made with a definite purpose, they must record the facts, so for that reason they are never hurried.

The face bosses are able to make three inspections each day, the assistant foreman gets around to all men at work once daily, the foreman once a week, the coal inspector two and three times a week and the safety director once each two weeks.

A foreman's conference is held each two weeks, following the inspections of the safety director.

Special care is given to the hiring of men and more particularly when they are to be leaders or foremen, but sometimes we get a man who doesn't quite fit and we begin at once to make him fit, if he can stand criticism he stays, we have developed some very high type workmen and foremen this way.

The quality we aim to develop in our employes is the right attitude toward safety, to be ever mindful of the dangers about them, to mix a little care and caution with every job. We have found the miner who will stop loading his car and set a timber is a mighty good prospect for a leader.

Our foremen are strong men who have learned to take and give orders.

The General Safety Campaign

Our safety campaign is supported by many other activities, all of which aim to enlist the interest of every employe and to weld the interest of every department or section of the mine.

In carrying the safety message to the individual workman and his family we hold monthly safety rallies in community halls, these meetings are always crowded to capacity, many of the leading entertainers of the country have appeared on our programs, which are mostly social, with just enough safety talks to make it a safety meeting.

First aid training is an annual affair with us and it is noticed that there are few people in our communities who have reached the age of reason who have failed to share the ideals of safety and the spirit which would protect their neighbors and friends from injury.

To help keep the safe way well advertised we have a system of many bulletin boards, our messages are brief, attractive and timely, they create interest and demand attention. This form of advertising must be given considerable thought if the safety idea is to be sold that way, otherwise it would be a waste of time and money to maintain them.

We carry a page in the leading county newspaper, the object is to interest the reader, gain his confidence, and stimulate his good will, we edit from the readers' viewpoint, stressing the value of industry, thrift and common sense. We aim to give what is wanted and add some things that are needed and we hope in this way to help many from wandering too far from the right road.

Every member of the official organization is behind the safety program, they know it is a function of management and supervision to stop accidents. The foremen's conference has done much to awaken in all foremen a sense of responsibility in teaching their men the importance of proper procedure.

The churches and schools have joined our campaign, forming one great big organization to make life more interesting and the community a more desirable place in which to live and a place where the workman may get a greater amount of pleasure and satisfaction from his work.

Does Water Damage Storage Batteries?

By HARRY BEWLEY*

WHAT happens to storage batteries submerged during floods? Are they damaged? And what should be done to restore them to normal condition?

These questions have been asked following the recent floods in the East, and the operating department of the Electric Storage Battery Company, manufacturers of Exide batteries, Philadelphia, has delved into its flood records of past years for the answers. As floods of one sort or another are always a possibility, the answers will, no doubt, provide information of value to the battery user in the event of a future emergency.

These flood records reveal one outstanding fact—that submersion causes no permanent damage to Exide batteries of either the closed or open top types. This statement is based on data collected over many years, during which Exides have been submerged at times in water as deep as 780 ft., and for periods as long as an entire month.

In most cases it was only necessary to clean the batteries and recharge them. In a few instances, where silt or other dirt had entered the cells, renewal of the electrolyte was necessary.

The records of the Exide operating department indicate that in certain classes of service, such as in mining or tunneling, Exide batteries have frequently been submerged at the bottom of flooded mine shafts. In one instance a 90-cell Ironclad type of Exide in a mine locomotive was submerged 500 ft. for 31 days. When the shaft was finally pumped out and the locomotive recovered, the Exide-Ironclad was soon put back into service merely by renewing the electrolyte and recharging it. That was nearly two years ago, and all indications are that the battery will continue to function efficiently throughout its normal life.

Another instance occurred when water was struck in a tunnel and the shaft filled to a height of 780 ft. An Exide-Ironclad battery in a locomotive was at the bottom of the shaft and remained there until the water was finally pumped out. A cleaning of the battery, with a change of electrolyte and a recharging, put it back into service with no permanent damage having been caused.

Other cases include Exides submerged as the result of dam breaks, rivers overflowing, and basements being flooded by fire apparatus.

This ability of the Exide to withstand the effects of water was an important factor in the restoration of railroad service in the Pittsburgh area and other railroad points affected by the recent floods. As soon as the water had receded, some of these Exides were found to be in a partially charged condition and ready to operate the switches. In most instances, as for example crossing lights, the circuits were closed and the Exides were drained of current while submerged. These, however, were restored to service as soon as power for recharging was supplied.

A similar situation existed in some of the industrial plants affected by the flood. As soon as the water had receded the Exide-Ironclad batteries on electric trucks were found to be workable even

(*Concluded on page* 29)

* The Electric Storage Battery Co.

Mechanization Trends

Reports of Coal Operators Committees

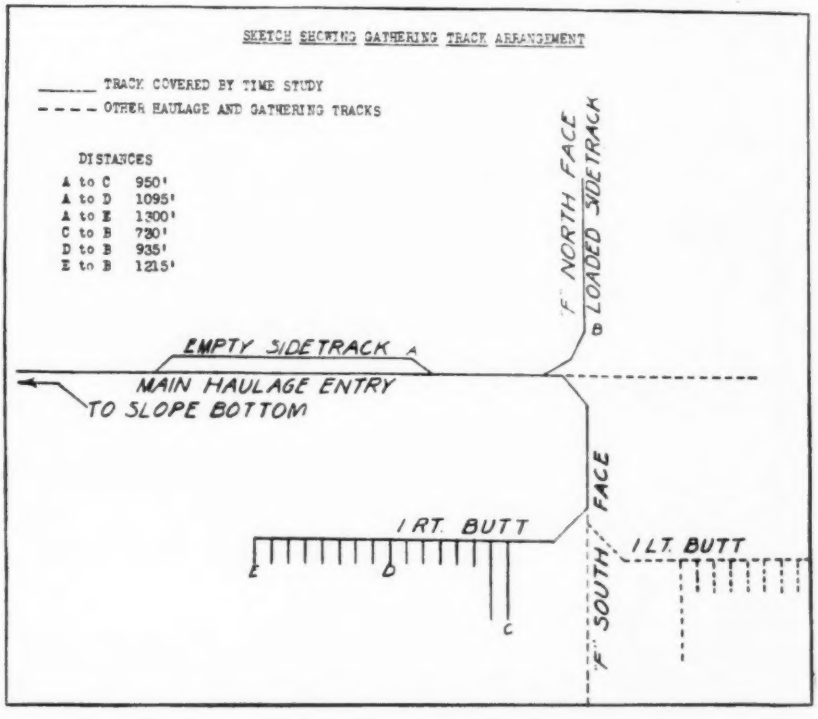
Gathering Haulage Methods

Report by the District Committee of Northern West Virginia

General Description and Conditions

1. A room and pillar single panel system of development is used. This system is similar to that used in nearly all mines in the Panhandle District, except that butt entries are driven 16 ft. wide, and rooms are driven from only one side of the entries. No attempt is made to extract the room pillars.

Gathering haulage is by trolley locomotives equipped with crab and rope. The prevailing practice is to locate the side-track on the main entry, outby the room entry, so as to serve two or more room entries and the various entries being driven for development. The gathering locomotive serves from the side-track to the working faces. Sketch of gathering haulage layout is shown herewith.



2. The rooms are 250 ft. in length and 35 ft. on centers.

3. Rooms are 24 ft. in width, and butt entries are 16 ft. wide.

4. A standard panel has 16 working places.

5. All loading is done by hand.

6. The mine cars used have a capacity of 2.3 net tons, are of wooden construction, and have plain bearing trucks.

7. The gauge of the track is 36 in. The weight of the rail used in room entries and rooms that are cut by track-mounted mining machines is 30 lbs. to the yard. In room entries and rooms that are cut by shortwall mining machines the weight of the rail is 20 lbs. to the yard.

8. Room necks are turned at an angle of 90°. A No. 2 turnout with a cast frog and 3-ft. 6-in. latches is used on room switches. No throw is used on room turnouts, but raised kick plates are used instead to keep proper gauge.

General Description of Operation

9. Type of gathering equipment: A 4-ton gathering locomotive equipped with crab and rope is used between face and room neck, and (b) the same locomotive is used between room neck and parting.

10. One gathering unit is used between face and room neck, and (b) the same unit is used between room neck and the parting, usually serving from 14 to 16 rooms and 2 entries.

11. From 95 to 120 cars are loaded per shift in a panel.

12. The average length of haul from the working face to room neck is 125 ft. The average length of haul from the room neck to parting one way and exclusive of shifting is 850 ft.

13. The grade between the face and room neck is fairly uniform, although in some cases the grade reaches a maximum of ¾ of 1 percent for the loads.

The grade between room neck and parting is mostly uniform, reaching as a maximum ¾ of 1 percent for the loads, and in some places against the loads, caused by local dips.

Performance Records (A) From Face to Room Neck

14. In the system of mining used there are usually two loaders in each room or working place.

For the purpose of illustrating the general performance of the gathering locomotive we will assume that 16 rooms on a butt entry are being taken care of.

An average of 10 or 11 cars constitute a trip. The empty trip is pulled from the side-track. In coming up the butt entry the trip of empties are left standing outby room 13 after the locomotive has uncoupled from them. The locomotive stops in front of room 16 and the snapper takes the crab rope into the room, hooking the rope onto the loaded

car. The load is brought out to the room neck by the locomotive pulling in the crab rope, and the car is then coupled to the locomotive, which moves to neck of room 15. The load in room 15 is then pulled and following likewise the loads in rooms 14 and 13 are pulled. The locomotive then places one empty in front of each of the above-mentioned 4-room necks, from where the loader pushes the empty to the working face. This procedure is usually continued along the entire entry until all the loads from the rooms have been gathered and the empties placed. A loaded trip of approximately 10 or 11 cars will then have been gathered and will be pulled to the side-track. In some cases rooms 3 to 16, inclusive, on one entry and the two developing entries directly across the face heading are serviced by the same locomotive, due to the fact that rooms 1 and 2 were driven up in advance to be used as air rooms.

15. As a rule there are two loaders assigned to one working place.

16. Only one car is placed at one time in each working place.

Performance Records (B) From Room Neck to Parting

21. From 14 to 20 working places are served by one gathering unit.

22. From 10 to 14 cars are handled in one trip. Usually 10 or 11 cars constitute a trip.

23. From 85 to 115 cars are handled per shift.

24. Two men are employed per shift on one gathering unit.

25. Time studies in tables herewith.

TIME STUDY DATA

Empties Per Trip	Time Arrived at Butt	Time to Place and Gather	Time Leave Butt	Loads Per Trip	Time Butt to Parting and Return	Delays	Remarks
16	7.30	29 min.	7.59	0	.....	.....	
12	8.30	25 min.	8.55	12	31 min.	19 min.	Waiting for empties
10	9.00	23 min.	9.23	9	5 min.	.....	
12	9.35	30 min.	10.05	11	12 min.	.....	
10	10.18	24 min.	10.42	14	13 min.	4 min.	Waiting for empties
10	10.58	22 min.	11.20	12	16 min.	9 min.	Waiting for empties
10	11.36	23 min.	11.59	11	16 min.	4 min.	Waiting for empties
11	12.40	26 min.	1.06	12	41 min.	30 min.	Lunch
10	1.40	25 min.	2.05	12	34 min.	16 min.	Repair to motor
12	2.20	20 min.	2.40	12	15 min.	.....	
0	2.50	14 min.	3.04	8	10 min.	.....	
113	.....	.....	.....	113	.....	82 min.	Total
10.2	.....	23.7 min.	.....	10.2	16.3 min.	.....	Average

TIME STUDY DATA FOR 7 HOURS AND 34 MINUTES, INCLUDING LUNCH PERIOD

Total round trips	10
Total loaded cars pulled	113
Total empty cars placed	113
Average number of empties per trip	10.2
Average number of loads per trip	10.2
Average time to place empties and gather loads	23.7 min.
Average time from butt to parting and return	16.3 min.
Total man-hours gathering and placing	8.70
Total man-hours from butt to parting and return	5.42
Total man-hours delay	1.73
Total man-hours on job	15.08

SUMMARY OF DELAYS

Waiting on empties	36 min.
Repair to motor	16 min.
Lunch and waiting on loads	30 min.
Total	82 min., or 1 hr. 22 min.
Actual time worked	6 hrs. 12 min.—81.9%
Delays	1 hr. 22 min.—18.1%
Total time on job	7 hrs. 34 min.—100%

Submitted by W. W. DARTNELL,
District Committee of Northern West Virginia.

REPORT BY THE DISTRICT COMMITTEE OF COLORADO, WYOMING AND MONTANA

General Description	A	B	C	D
1. Mining system.	Panel system	Room & pillar	Room & pillar	Room & pillar.
2. Length of rooms and distance between room centers.	300 ft., 55-ft. centers	45 ft.	250 ft., 70-ft. centers	200 ft., 50-ft. centers
3. Width of rooms and entries.	30 ft.	30 ft. & 16 ft.	25 ft. & 10 ft.	28 ft. & 16 ft.
4. Number of working places in a panel.	..	2	3 shakers	42
5. Method of loading, i. e., hand or mechanical.	Mechanical	Mechanical, duckbill	Mechanical	Mechanical
6. Capacity and type of mine car.	2,200 lbs.	3,300 lbs.	Wood car, 2 tons	Avg. 2.91 tons.
7. Track gauge and weight of rail in rooms and entries.	30 in., 16 & 20 lbs.	36 in., 30 lb. steel	42 in., 30 lbs. in entries	42 in., 20 lbs.
8. Angle of room neck and frog.	90°, No. 3 frog, latch	No track in room	None used	90 °, No. 3¼ frog
Operating Methods				
9. Type of gathering equipment:				
a. Between face and room neck.	Shaker conveyor	..	..	Battery & reel locomotives
b. Between room neck and parting.	Animal and hoist	Locomotive and hoists	Locomotive	10-ton trolley locomotives
10. Number of gathering units used in panel:				
a. Between face and room neck.	1	1	None	1
b. Between room neck and parting.	1		1	1, serving 2 loading units
11. Number of cars loaded per shift in a panel.	100	150	75	100
12. Average length of haul:				
a. Between face and room neck.	300 ft.	¼ mile	1,000 ft.	100 ft.
b. Between room neck and parting.	1,700 ft.			3,000 ft.
13. Average and maximum grade, for and against loads:				
a. Between face and room neck.	1%, for loads	2% for loads	1% with loads	7% avg., 14% maximum
b. Between room neck and parting.	1%, for loads			7% avg., 14% maximum
14. Number of cars placed at one time.	4	12	..	1 to 4
15. Number of working places served by one gathering unit.	17	2	3	2
16. Number of cars handled in one trip to and from parting.	6	12	30	18
17. Number of cars handled per shift by one gathering unit.	100	150	75	200 avg.

Submitted by GEORGE B. PRYDE,
District Committee of Colorado, Wyoming and Montana.

"Out Where the West Begins"

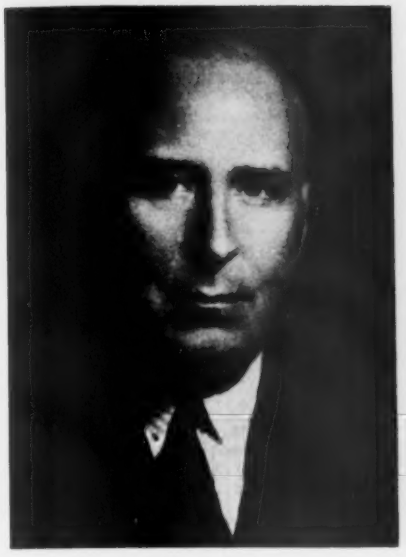
THE METAL MINING CONVENTION . . .

MINING is one of this country's greatest assets. When the mines are closed down repercussions are heard throughout all industrial centers. During the years of the depression metal mining has been severely curtailed, and in many instances whole camps closed down. The past year has seen this situation changing swiftly. Throughout the western half of the United States much mining activity is in evidence. Established producers are rehabilitating and reequipping their properties. Many new producers are being developed and many properties that have been dormant are again coming into the market. In practically every state in the Rocky Mountain area this is true. Colorado's mining revival is well under way. This state has for many years been one of the greatest mineral producers in the United States, and promises soon again to maintain its rightful place as a mineral producer. California, Nevada, Arizona, New Mexico, Idaho, Utah, and Montana are all busy building new mills, rehabilitating old properties, and developing new enterprises.

It is then most fitting that the annual meeting of the Western Division of the American Mining Congress shall be held at Denver, Colo., a central location to western mineral-producing districts. Howard I. Young, president of the American Zinc, Lead & Smelting Co. and president of the American Mining Congress, early in the year announced the dates for this meeting as September 28 to October 3, and the place as the Civic Auditorium, Denver. Later in the year he announced the acceptance of the chairmanship of the program committee by Mr. Stanly A. Easton, president, Bunker Hill and Sullivan Mining & Concentrating Co., Kellogg, Idaho. The Hon. Jesse F. McDonald, former governor of the state of Colorado and prominent mining man, is the national chairman of the Western Division. Cooperating with Mr. Young, Mr. Easton, and Governor McDonald is an industry-wide committee, arranging for the program, sponsoring the exposition and developing interesting plans for entertainment features.

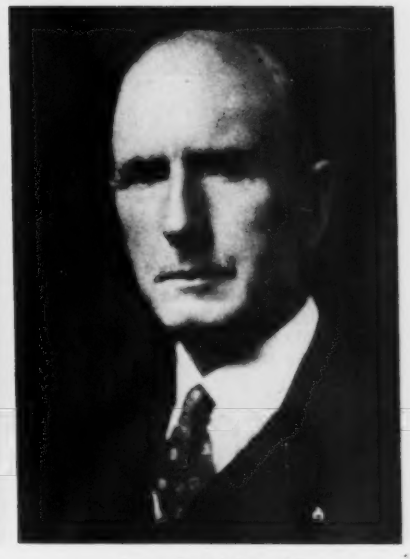
State and district chairmen on the program committee are: T. H. O'Brien, general manager, Inspiration Cons. Copper Co.; John A. Burgess, Carson Hill Gold Mining Co.; Charles A. Chase, Shenandoah-Dives; Walter C. Clark, Bunker Hill & Sullivan Mining & Concentrating Co.; Clinton M. Roos, Fairview Gold Mines, Inc.; J. C. Kinnear, Nevada Consolidated Copper Corp.; E. H. Wells, New Mexico School of Mines; Guy M. Bjorge, Homestake Mining Co.; H. E. Treichler, Texas Gulf Sulphur Co.; James W. Wade, Tintic Standard Mining Co.; W. P. Chinn, Pickands, Mather & Co.; George W. Potter, Eagle-Picher Mining & Smelting Co.; Russell B. Paul, New Jersey Zinc Co.; R. M. Hardy, Sunshine Mining Co.; H. A. Coy, American Zinc, Lead & Smelting Co.

The convention will open on Monday noon, September 28, with a luncheon in honor of James F. Callbreath, secretary emeritus of the American Mining Congress. The organization was founded in Denver, maintained its headquarters there for many years, and Mr. Callbreath was its first secretary. D. A. Callahan, president of the Callahan Zinc-Lead Co., will preside at the luncheon, and the Hon. Edward C. Johnson, governor of the state of Colorado, will welcome the delegates. The first session of the convention will be Monday afternoon, with Jesse F. McDonald, president of the Downtown Mines Co., and governor of the Western Division, presiding. Others who will preside at various sessions of the convention are Charles H. Segerstrom, president of the Carson Hills Gold Mining Co.; the Hon. James Owen, Denver mining attorney; D. D. Moffat, vice



Stanly A. Easton
National Chairman, Program Committee

Howard I. Young
President, American Mining Congress



Jesse F. McDonald
Chairman, Board of Governors, Western Division

president of the Utah Copper Co.; and Stanly A. Easton, Bunker Hill & Sullivan M. & C. Co. Among the papers to be presented are the following: "The Bureau of Mines and Metal Mining," by the Hon. John Wellington Finch, director of the Bureau; "Molybdenum—Colorado's Newest Industry"; several papers will be presented upon "Health in Mining and the Relation Thereto of Air Dustiness." Among the speakers on this topic will be Dr. A. J. Lanza, Metropolitan Life Insurance Co.; C. E. Brown, United States Bureau of Mines; William B. Daly, Anaconda Copper Mining Co.; and others to be announced later.

One entire session will be devoted to tax problems. Speakers include Henry B. Fernald, nationally known tax authority and chairman of the National Tax Committee of the American Mining Congress; John P. Barnett, former attorney general for the state of Colorado; E. C. Alvord, tax attorney, and prominent mining men.

A feature of the meeting will be the Mineral States Conference, which is proposed to discuss the feasibility of an industry-wide committee to act as a clearing house of information, statistical and otherwise, on the economic importance of the mineral industries to industrial America.

An important session will be devoted to recent legislation affecting the mining industries and the need for united action. A round-table conference is being arranged on "Government and Industry," the speakers to include such important representatives of industry as R. C. Allen, vice president, Oglebay Norton & Co.; L. E. Geohegan, vice president, Gulf States Steel Co.; Eugene McAuliffe, president of the Union Pacific Coal Co.; Max Schott, president, Climax Molybdenum Co.; A. E. Bendelari, president, Eagle-Picher Lead Co.; Donald A. Callahan, Callahan Zinc-Lead Co.; Stanly A. Easton, Bunker Hill & Sullivan Mining & Concentrating Co.; and a number of others to be announced later.

The exposition, which will be held in the same building with the convention sessions, will offer an interesting and important display of mining machinery, equipment, and supplies. At this date more than 40 companies have arranged for space, which insures one of the most successful expositions ever held under the auspices of this group. These exhibitors include:

Ahlberg Bearing Co.
Allen-Sherman-Hoff Co.
American Sheet & Tin Plate Co.
American Steel & Wire Co.
Atlas Powder Co.
C. S. Card Iron Works.
Carnegie-Illinois Steel Co.
Colorado Fuel & Iron Corporation.
Crucible Steel Co. of America.
Denver Equipment Co.
Denver Fire Clay Co.
The Dorr Co., Inc.
E. I. du Pont de Nemours & Co.
Thomas A. Edison, Inc.
Gardner-Denver Co.
General Electric Co.
General Engineering Co.
Goodman Manufacturing Co.
Hendrie & Bolthoff M. & S. Co.
Hercules Powder Co.
Ingersoll-Rand Co.
Jeffrey Manufacturing Co.
A. Leschen & Sons Rope Co.
Lorain Steel Co.
Magnetic Manufacturing Co.
Mancha Storage Battery Co.
McGraw-Hill Publishing Co.
McNally-Pittsburg Mfg. Co.
Mine & Smelter Supply Co.
Mine Safety Appliances Co.
National Fuse & Powder Co.
National Tube Co.
Ohio Brass Co.
Oliver United Filters, Inc.
Robins Conveying Belt Co.
John A. Roebling's Sons Co.

(*Concluded on page* 29)

Wheels of Government

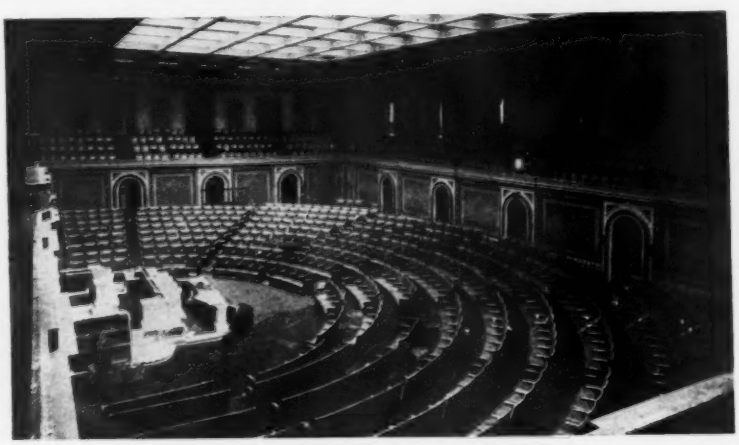
FOLLOWING immediately upon the adjournment of the national Congress, repercussions from the Democratic National Convention at Philadelphia held the limelight in the early part of July. Much of the thought since in Washington has been political. The President's acceptance speech, the magazine and newspaper polls, pronouncements by the Chairmen of the Democratic and Republican National Committees, and the acceptance speech of Governor Alf Landon, at Topeka, Kans.—all these have come in for preferred attention.

In winding up the work of the second session of the 74th Congress, the President signed the many bills passed and vetoed a few. Eight hundred and eighty-one bills were approved and 85 vetoed.

Another happening which made news was the ending of Comptroller General McCarl's 15-year term of office. There has been much discussion as to General McCarl's successor and expectant candidates for the place have been hopefully working for the past 10 months to secure the appointment. It is not expected that the place will be filled until after the national election in November.

In the meantime, investigating committees of the Congress authorized by resolutions, have as yet given no signs of early activity. There is the LaFollette Subcommittee of the Committee on Education and Labor composed of Senators LaFollette (Wisconsin); Murphy (Dem., Iowa—since died of automobile injuries) and Thomas (Dem., Utah), which was authorized to conduct hearings into alleged interferences with collective bargaining and rights of free speech. There has been no indication as yet as to when this committee will go into action.

The special Senate Committee headed by Senator Harry Byrd (Dem., Virginia) for the investigation into overlapping government departments, and wastes and extravagance in the administration of government business, has caused questionnaires to be sent to all government departments. The statistical work for the committee is being carried on by the Brookings Institution and it is anticipated that the committee will have the advice of former Comptroller General McCarl. Senator Byrd has announced that he will present to the next Congress a complete report with definite recommendations to bring about reductions in governmental expenditures.



The investigation into the potash industry by a Senate Public Lands Subcommittee is, in its early stages, being carried on by a representative of that committee without the use of subpoena. The subcommittee named consists of Senator Pittman (Dem., Nevada), Chairman; Senator Wagner (Dem., New York); Ashurst (Dem., Arizona); Hatch (Dem., New Mexico); and Carey (Rep., Wyoming). It is anticipated that hearings will be held in California and New Mexico after the fall elections.

The old line Federal Departments and particularly the Treasury and the Department of Labor are wrestling with the problems of developing regulations for the administration of the Revenue Act of 1936 and of the Walsh-Healey Government Contracts Act respectively. Up to the present time, the Treasury has issued T. D. 4649 entitled "Withholding of Income Tax under Sections 143 and 144 of the Revenue Act of 1936" and which refers particularly to the withholding of tax at source and the payment of corporation income tax at source. Under date of July 3 was issued an income tax mimeograph entitled "Taxation of Non-Resident Alien Individuals and Foreign Corporations under the Revenue Act of 1936." A further Treasury Decision No. 4666 deals with "Regulations Relating to the Excess Profits Tax imposed by Section 106 of the Revenue Act of 1935 as Amended by the Revenue Act of 1936." This Treasury Decision also includes the regulations covering the capital stock tax. Under date of July 10, there is a further income tax mimeograph entitled "Information Necessary in Support of Depreciation Deductions."

In the Department of Labor, an approach is being made to the development of regulations for the administration of the Government Contracts Act, more commonly known as the Walsh-Healey Act. The statement of policy on the part of Secretary Perkins with reference to the Act is herewith presented for quick reading as follows:

"1. Public hearings will be held to determine prevailing minimum wages in the various industrial localities. NRA code minimum-wage provisions will not be arbitrarily adopted.

"2. Once a prevailing wage determination has been made for an industry, it will apply to all members of that industry. (Several months are anticipated before determinations can be made for all industries.)

"3. Pending wage determinations, government contractors will be required to meet only the other labor provisions of the Act.

"4. First industries to be studied will be those in which minimum wages are lowest.

"5. Wage determinations are aimed to end bid-peddling whereby brokers sublet portions of contracts to substandard factories. Bidders, however, may deal with legitimate subcontractors.

"6. Regulations will be promulgated shortly before September 28, providing uniform procedure in order to avoid delays.

"7. Overtime rates may be provided for in the regulations, consideration to be given for varying conditions.

"8. Provisions will be made for purchase of floor stocks without going behind the actual and bona-fide seller.

"9. A special administrative unit will be established in the Department of Labor and a Board will be named to consider quasi-judicial and regulatory matters. Studies will be made by existing divisions of the Labor Department with recommendations to be made by the Chief Examiner as the principal administrative officer.

"10. A panel of industrial and labor consultants will be named

who are familiar with industries affected to aid the Chief Examiner, the Board, and the Secretary."

Representatives of industry have conferred with Secretary Perkins and the staff of the Department of Labor and it is anticipated that there will be further conferences preceding the effective date of the Act, September 28, 1936. It is not anticipated that the Board of 3 which will administer the Act will be announced for appointment until the effective date.

The Federal Trade Commission is approaching its administration of the Robinson-Patman Price Discrimination Act with extreme care. Secretary of the Commission, Otis B. Johnson, has released a brief statement of procedure under the Robinson-Patman Price Discrimination Act which, because of its significance, is herewith reproduced.

"Since the passage of the Robinson-Patman Act, the Commission has had a number of inquiries as to the method to be followed in calling the Commission's attention to apparent violations and the procedure to be followed by the Commission in the enforcement of the Act. Under the Commission's procedure any one may call to its attention the violation of any law over which the Commission has jurisdiction. Such application should be in writing, signed by or on behalf of the applicant and should contain a definite statement of the facts and the name and address of the applicant and of the party complained of. If, upon investigation of the matters thus brought to its attention, the Commission has reason to believe that there is a violation of law coming within its jurisdiction, and that the public interest would be served by the issuance of a formal complaint, the Commission will take steps to issue and serve such complaint.

"The fact that the Commission is required to follow certain formal procedure prescribed in the Act before it can say whether the Act has been violated makes it impracticable for the Commission to express informal opinions upon the legal status of matter presented on the basis of hypothetical or ex parte statements of fact."

The Commission has prepared and issued, a 34-page mimeograph "To make available in a compact manner statements made with reference to this Act by the Committees reporting the bill, at the hearings, and in the debates by those in charge of the bill and others." The final issue of this mimeograph is under date of July 25. On page 17 of the mimeograph, the Commission quotes from the brief submitted by Julian D. Conover, Secretary of the American Mining Congress in an appearance made before the House Judiciary Committee in which it was asked that the mineral and metal industries be exempted from the provisions of the Act. As of today, the application of the Act and its administration are still matters upon which able counsel are unable to agree except to the extent that court rulings will be necessary before clarification can be had.

The Securities and Exchange Commission in the administration of the Securities Exchange Act of 1933 and amendments thereto, has prepared a proposed new ruling relating to exemptions from registration of issues of securities of less than $100,000—other than in the case of gas and oil. A complete new registration statement for mining securities under this classification and a book of instructions have also been prepared by the Commission. In this work the Securities Exchange Commission and its staff are endeavoring to function constructively and are open to suggestion and assistance from those interested in the development of mining enterprises.

Does Water Damage Storage Batteries?

(*Continued from page* 23)

though the batteries had been under many feet of water. It was only found necessary to wash them off, in cases of mud or silt deposit, and then recharge them. For cells into which flood water had leaked through the vent opening, a syringe or hydrometer barrel was used to draw off the excess water at the top. Many cells were seen, however, wherein there had apparently been no leakage through the vent openings, as the electrolyte level was found to be between the upper and lower filling level marks on jars. In cases where batteries had been considerably overdischarged in carrying the load following the power interruption, the batteries were restored by an overcharge.

Even the open-glass and lead-lined tank type batteries came through in good shape. Due to their open construction, all cells were flooded. However, on an overcharge it was found that the loss of electrolyte was usually very small, and most cells came back to within a few points of their previous maximum gravity.

The Exides in the telephone exchanges affected by the flood continued to function although under from 8 to 20 ft. of water. When the water had receded, these batteries were soon put into normal condition merely by cleaning the silt from the tops and recharging. In some cases, the electrolyte was changed.

Metal Mining Convention

(*Continued from page* 27)

St. Louis Power Shovel Co.
Sullivan Machinery Co.
Timken Roller Bearing Co.
U. S. Steel Corp.
Vulcan Iron Works.
Western Cartridge Co.
Worthington Pump & Machinery Co.

An interesting phase of the exposition and supplementing the Mineral States Conference will be the Mineral States Exhibit, which will attempt to present for every metal-mining district in the United States graphic and statistical information which will show the importance of metal mining to the state, to the country, to the wage earner, and to the industries dependent upon metals.

The state of Colorado and the mining men of that state are planning a rousing welcome to delegates to this convention. A general committee on arrangements has been appointed, which includes the Hon. James Owen as chairman, and John T. Barnett, Thomas A. Dines, Gerald Hughes, Arthur Roeder, Russell P. Reynolds, Thomas B. Stearns, Claude K. Boettcher, Adolph F. Zang, and J. O. A. Carper as members. This committee is arranging for a series of delightful events which will insure the comfort and happiness of all delegates.

Mrs. Jesse F. McDonald will serve as official hostess for the convention. A committee has been appointed with particular reference to entertainment for the visiting ladies. This will be under the direction of Mrs. B. P. Morse as chairman, who will have the assistance of a distinguished group of ladies and the cooperation of the Ladies' Auxiliary of the American Institute of Mining Engineers.

Cooperating in all the developments of the convention and exposition is the Colorado Mining Association and Colorado Chapter of the American Mining Congress, Robert S. Palmer, secretary.

Full details on the program, entertainment features, and arrangements will be announced in the September Annual Metals Edition of THE MINING CONGRESS JOURNAL. This is one convention that should receive the most complete cooperation from all metal-mining men, and undoubtedly the group that will congregate at Denver, September 28 to October 3, will, through its deliberations, have a far-reaching effect upon the future of the mining industry.

● A LETTER was recently sent by the National Resources Committee to 46 state planning boards suggesting that each draw up six-year construction budgets for submission to the Federal agency. The effect, if carried out, would be to make Federal public works into a steady major industry to absorb unemployment slack in good as well as bad times. The projects would be undertaken in the order of priority desired by the states and would likewise enable long-time future planning of expenditures of Federal and state funds for projects. At the same time this week PWA Administrator Ickes announced release of $22,742,034 to finance 352 projects throughout the country. The Federal money represents a grant of 45 percent of the cost of each project, thus indicating an expenditure of more than $50,000,000 for additional projects. All of these projects must be started before October 1, 1936, and completed within one year. An additional 450 projects on which the Government would grant $50,000,000 are now awaiting the President's approval.

Current Legal Problems of the Mineral Industries

(*Continued from page* 14)

though 13 out of 24 Senators voted for conviction,[60] and after the commotion had subsided the legislature removed the cause of complaint by the following statute:

> No publication out of court, respecting the conduct of the judges, officers of the court, jurors, witnesses, parties or any of them, of, in or concerning any cause depending in such court, shall be construed into a contempt of the said court, so as to render the author, printer, publisher, or either of them, liable to attachment and summary punishment for the same.[61]

The purpose of this act was to accord such persons a trial by jury when accused of indirect criminal contempt. It was a special privilege which accrued largely to the newspaper fraternity. Organized labor was then in its infancy. The power of labor is now comparable to that of the press, and it is not surprising that labor unions should demand the same privilege. It was granted by the legislature of Pennsylvania in 1931. The statute provides that where acts alleged to constitute a violation of an injunction are not permitted in the presence of the court, or so near as to interfere directly with the administration of justice, the accused should enjoy (a) the right to admission to bail, (b) notification of the charge and a reasonable time to prepare a defense, (c) trial by jury upon demand, and (d) the right to demand the retirement of the presiding judge under certain circumstances,[62] The constitutionality of the act was immediately questioned. In *Penn Anthracite Mining Company* v. *Anthracite Miners of Pennsylvania*,[63] the defendants were charged with violating an injunction by preventing the employes of the plaintiff from going to work and other unlawful acts alleged to have been committed several miles distant from the court. After being cited for contempt they demanded a jury trial. This was refused by the lower court on the ground that the power to punish for contempt was inherent in the court—which was created by the Constitution—and, therefore, beyond the power of the legislature. The Supreme Court pointed out that the acts complained of were not committed in the presence of the court, that the parties were in a court of equity, and that under the Constitution of Pennsylvania it was for the legislature to say what chancery powers should be exercised. The judgment was accordingly reversed and a jury trial awarded. The net result will probably be a less rigid enforcement of injunctions of this type.

[60] Loyd, William H., "The Early Courts of Pennsylvania," p. 146.
[61] Act of April 3, 1809, P. L. 146; perpetuated by Act of June 16, 1836, P. L. 784, 17 P. S. Sec. 2044.
[62] Act of June 23, 1931, P. L. 924, 17 P. S. Sec. 2047.
[63] 114 Pa. Superior Ct. 7 (1934), affirmed, 318 Pa. 401 (1935).

● SHIPMENTS of uncut sheet mica in 1935 increased to 936,633 pounds, valued at $161,150, a gain of 61 percent in quantity and 79 percent in value over 1934. Sales of scrap mica amounted to 18,852 tons, valued at $243,951, including 6,667 tons of fine mica, valued at $111,345, recovered from washing kaolin and by grinding muscovite, chlorite, and sericite schists.

● THERE has been a dearth of decisions recently from the National Labor Relations Board. The Board denies that recent adverse court decisions affect their program and it is understood that numerous cases are now under "study" and decisions may be expected shortly. A cumulative report of cases handled shows that the Board has had referred to it upwards of 1,000 labor cases. No decision has yet been made on which of the cases in the court will be taken to the Supreme Court on appeal for final determination of the constitutionality of the Labor Relations Act. Since the New Orleans Circuit Court recently refused the Board a rehearing on the Jones & Laughlin case (decided against the Board) it is apparent that the Board may appeal that case within the next few weeks. It is believed, however, that more than one case will finally reach the Supreme Court, probabilities being that Jones & Laughlin, Fruehauf, A. P. and others may all come up simultaneously for review and decision. Only the latter was decided in favor of the Board.—*A. M. C. Weekly Bulletin.*

News and Views

of Interest to Mining Men

● THE HECLA MINING COMPANY which has acquired the Polaris property in the silver belt section of the Coeur d'Alenes, after opening large ore bodies on a level 920 ft. below the original tunnel level, has decided to further develop the ore by sinking an additional 500 ft. before building a mill and proceeding to production. This is a material modification of its plans and indicates that the company believes it has the making in the Polaris of another of those big mines which have made the Coeur d'Alenes famous.

Hecla has been highly successful in developing ore on the 920-ft. Polaris level and above and below it. On that level the ore body is more than 400 ft. long and from 2 to 7 ft. wide. At one point the ore occupies both sides of the drift. Furthermore it has been explored for more than 100 ft. below that point with indications that it may be even more extensive on the 1,040-ft. level. A new raise has also been made from these levels to the surface 1,500 ft. above.

The three-compartment shaft is now to be extended to an additional depth of 500 ft. and mill construction has apparently been postponed until this deeper exploration is at least well under way. This big ore body on the 920 and 1,040-ft. levels has also been reached by a two-mile tunnel through the Silver Summit ground. The Hecla has added the Silver Summit to its holdings and is also developing ore in this direction.

● IN ORDER that at least some preliminary groundwork may be done before the next Congress on the lignite coal study ordered last session, attempt is being made by the Bureau of Mines to obtain funds from other sources. If this is successful, work will be started on a preparatory basis. Congress, after authorizing the study, failed to provide funds for it.

● THE LAKE SUPERIOR MINING INSTITUTE will hold its annual meeting, at Ishpeming, Mich., on August 28 and 29.

● IN ANNOUNCING an increase in the national income in 1935 to $53 billion—$4.6 billion more than in 1934—the Department of Commerce, Division of Economic Research, made clear that a larger income was shown for each of the 12 major industrial divisions under which the total national income is classified. At the same time the Department explained that income paid out totalled $53.6 billion, and that in each industrial division the gain in income produced was greater than that paid out. This is the third consecutive year in which the national income produced showed a substantial gain.

Construction and manufacturing industries revealed the largest gains with increases of 10 percent or more occurring in the finance, agriculture and service industries as well.

"In 1935, relative to 1929," the Department stated, "income produced ranged from 30 percent in the construction and 47 percent in the mining industry to 72 percent in the communications industry and 74 percent in the electric light and power and manufactured-gas industry."

It is interesting to note that "agriculture's share of the national income produced reached a new high in 1935 at 9.1 percent as compared with 8.9 percent in 1929 and 5.9 percent in 1932."

In its tables concerning each of the 12 major industrial divisions, the Department's study shows that with 1929 at 100 percent, the mining industry's income produced fell to 69 percent in 1930, to 37 percent in 1931, 25 percent in 1932, and rose slightly to 27.6 percent in 1933, moved up to 44.5 percent in 1934, and gained a few more points in 1935 to 46.9 percent.

Income paid out by the mining industry ranged as follows, with 1929 as 100 percent: 1930, 83.3; 1931, 58.3; 1932, 39.7; 1933, 39.1; 1934, 50.1; 1935, 52.0.—*American Mining Congress Weekly Bulletin.*

● THE JOSEPH A. HOLMES SAFETY ASSOCIATION Certificate of Honor has been awarded to the United Electric Coal Company at Duquoin, Ill. That certificate was recently presented by the chief of the Health and Safety Branch of the U. S. Bureau of Mines and at the presentation, what is probably the world's record performance in the handling of rock and coal without a fatality, was made public. The No. 11 Mine has mined and handled more than 90,000,000 tons of material (5,600,000 tons of coal and 84,600,000 tons of overburden) with drag lines and shovels since September, 1929, to April 30, 1936, without a single fatality, and with but 61 minor accidents in 1,202 days' operation. The previous record, according to the Bureau of Mines, was the moving of approximately 75,000,000 tons of ore and overburden without a fatality by the Utah Copper Company in its open cut copper mine at Bingham, Utah.—*N. C. A. Bulletin.*

● THE WEST VIRGINIA exhibit at the Great Lakes Exposition, now being held at Cleveland, Ohio, will include two columns 12½ ft. high (to be constructed of 10 blocks of West Virginia coal 30 in. high by 30 in. wide by 24 in. deep); one column 6 ft. high (to be constructed of three blocks 24 in. high by 30 in. wide by 8 in. deep, and six blocks 24 in. high by 16 in. wide by 8 in. deep; and 2 columns 7½ ft. high (to be constructed of six blocks 30 in. high by 30 in. wide by 24 in. deep). These blocks are all to be set with a chromium band around each joint. The blocks were taken from one of the mines of the Island Creek Coal Company. The 25 blocks, as well as eight extras for emergencies, have been crated in burlap and excelsior and by this time are on their way to Cleveland. One of the 30x30x24 blocks was weighed and it netted 1,702 pounds. The Island Creek Coal Company and the West Virginia Coal Association are to be congratulated on making this particularly interesting exhibit possible.—*National Coal Association Bulletin.*

● WITH a fatality rate of 1.43 per million tons of coal mined, the bituminous coal industry in May set an all-time monthly record for safety as far back as the records of the Bureau of Mines extend, which is to January, 1913. These mines reported 41 fatalities during the month with a production of 28,678,000 tons of coal. Revised figures for April show 81 fatalities and a production of 30,318,000 tons, and a fatality rate of 2.67 per million tons. The May, 1935, rate was 2.91. In keeping with the splendid fatality record for May, the fatality rate per million tons for all bituminous mines for January to May, 1936, inclusive, is 2.112, a marked decrease from the 2.413 rate for the similar period of the previous year.

Commenting on the splendid May fatality record, Dan Harrington, chief of the Health and Safety Branch of the U. S. Bureau of Mines, accredits it in no small part to the determination of management to reduce accidents, brought about by an ever-growing realization as to the economic value, as well as the humanitarian worth, of such effort. He further says that the accident rate will continue to decrease.

● THE CARNEGIE-ILLINOIS STEEL CORPORATION announces the organization of a department of training, with J. Edward Johnson as director. The purpose is to give opportunity to employes and their sons to receive practical and technical training, which will enable them to qualify for better positions.

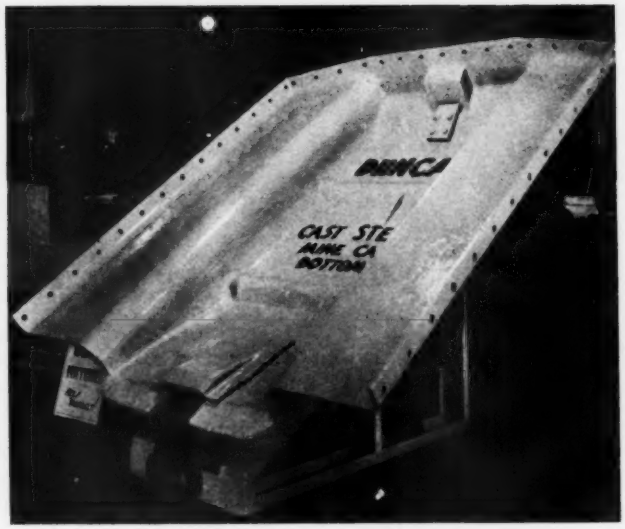
This department will have jurisdiction over all apprentice and sales training schools in the several plants, and will come under the general supervision of Mr. Ross L. Leffler, manager of industrial relations.

Mr. Johnson is a graduate of the Carnegie Institute of Technology.

● THE $500,000 zinc smelter being constructed by the Illinois Zinc Company will be ready for operation not later than October 1, according to C. R. MacBrayne, manager. The company is also spending approximately one-half million dollars in developing natural gas, constructing a pipe line to the plant and other improvements. The new smelter will receive its zinc ore from mines in Arizona.

● ANACONDA COPPER MINING CO. has adopted a group life insurance plan whereby the Prudential Insurance Company of America issues approximately $40,000,000 of life insurance covering roughly 28,000 Anaconda employes in the United States and Canada. Under the plan, all employes of Anaconda and its subsidiaries and affiliates not now insured under a group plan shall be insured as of July 6 to and including July 31, without contribution from them. During this period they will be given an opportunity to voluntarily signify their intention to continue the insurance on a basis whereby employe and employer will make joint contributions as set forth in plan. In order that the insurance may be continued, at least 75 percent of eligible employes must make individual application. The plan is based upon normal average earnings of employes and death benefits range from $1,250 to $10,000. Employes will contribute at the rate of 60 cents a month per $1,000 of insurance carried, balance to be paid by company.

● THE production of pyrites in 1935 amounted to 506,215 long tons, valued at $1,569,672, compared with 432,524 tons, valued at $1,216,363 in 1934, an increase of 17 percent in quantity and 29 percent in value. Tennessee was the largest producing state in 1935; others were California, Colorado, Illinois, Kansas, Missouri, Montana, New York, Virginia, and Wisconsin. New York increased its output of pyrites from 31,674 long tons in 1934 to 48,905 tons in 1935, a gain of 17,231 tons, or 54 percent. Production of pyrites in Missouri amounted to 24,883 long tons in 1935, compared with 14,557 tons in 1934, an increase of 71 percent. Illinois produced 1,114 tons of pyrites from coal-mining operations in 1935. This is the first production recorded for Illinois since 1931. In 1935 the quantity of pyrites sold or consumed by producing companies amounted to 504,825 tons, an increase of 17 percent, compared with 431,340 tons in 1934. The pyrites produced in 1935 contained approximately 199,457 long tons of sulphur; in 1934 the output contained 167,645 tons. The average price of pyrites, as quoted by trade journals, was 12-13 cents per long-ton unit throughout the year. Imports of pyrites for consumption in 1935 were 397,113 long tons, of which Spain furnished 387,140 tons; Canada, 9,888 tons; and Mexico, 85 tons. In 1934 a total of 366,315 tons were imported, of which Spain furnished 346,974 tons and Canada 19,341 tons.



The Duncan Cast Steel Mine Car Bottom, featured in the exhibit of the Duncan Foundry & Machine Company at Cincinnati, shows two of the new features in this line. The absence of bolts and rivets allows for greater wear and less cost of maintenance. The casting of the axle boxes with the car eliminates any possibility of expense for up-keep at this point

● STATISTICS released by the Department of Mines of Pennsylvania show the 1935 anthracite production as 51,359,111 tons. Of this 44,040,895 tons were shipped to market by railroad and 1,868,845 tons were shipped to market by truck (formerly shipped by rail). The balance of the production is about equally divided in sales to local trade and used at collieries for heat and steam. The anthracite mines worked an average of 187 days and employed 100,539 employes. For comparative purposes, 1934 anthracite production was 57,168,291 tons and for 1933, 49,541,344 tons.

● THE American Iron and Steel Institute pay roll figures compiled by the United States Department of Labor, show weekly wages actually received in the pay envelopes of the nearly 446,000 wage-earning employes in the steel industry average more than 18 percent higher than the average wages of employes for all manufacturing industries.

The latest Government records show steel employes earning an average of $26.38 in March, which compares with average weekly earnings of $22.25 for employes in all manufacturing industries. The average hourly wage rate in the steel industry of 66.2 cents in March is not only 16 percent above the average of 57.2 cents for all manufacturing industries, but more important, it exceeds the 1929 average wage rate of 65.4 cents reported for the steel industry in that year by the National Industrial Conference Board.

● THE APPOINTMENT of Arno C. Fieldner as chief of the Technologic Branch of the United States Bureau of Mines, is announced by Dr. John W. Finch, Director of the Bureau. Mr. Fieldner succeeds O. P. Hood, who recently retired after a long period of service.

A. C. Fieldner

Coincident with the appointment of Mr. Fieldner, the Bureau's Technologic Branch is reorganized. The name of the Mechanical Division is changed to the Coal Division and studies relating to the use of electrical and mechanical equipment in mines are transferred to the Mining Division.

O. P. Hood

Dr. John W. Finch

The Experiment Stations Division is discontinued, and the coal preparation section of the Experiment Stations Division and the experimental mine section of the office of the Chief Mining Engineer are transferred to the Coal Division.

A new division called the Non-Metals Division is created to take over the following technical sections of the discontinued Experiment Stations Division: Fundamentals, Beneficiation, Processing, Utilization and Water.

Hereafter supervising engineers of the various experiment stations are to report to chief engineers of divisions as follows:

The supervising engineer of the Pittsburgh Experiment Station will report to the chief engineer of the Coal division.

The supervising engineers of the Minneapolis, Rolla, Salt Lake City, Reno, Boulder City, and Berkeley Experiment Stations will report to the chief engineer of the Metallurgical Division.

The supervising engineer of the Tucson Experiment Station will report to the chief engineer of the Mining Division.

The supervising engineers of the New Brunswick, Seattle, and Tuscaloosa Stations will report to the chief engineer of the Non-Metals Division.

The supervising engineers of the Bartlesville, Laramie, and Amarillo Stations will report to the chief engineer of the Petroleum and Natural Gas Division.

Frank L. Hess, principal mineralogist, will report directly to the chief of the Technologic Branch.

The names and titles of the division heads of the Technologic Branch are as follows:

Coal Division, A. C. Fieldner, chief engineer; Explosives Division, W. J. Huff, chief chemist; Metallurgical Division, R. S. Dean, chief engineer; Mining Division, C. F. Jackson, chief engineer; Non-Metals Division, O. C. Ralston, chief engineer; Petroleum and Natural Gas Division, R. A. Cattell, chief engineer.

Mr. Fieldner, the new chief of the Technologic Branch, is a native of Ney, Ohio, and a graduate of Ohio Wesleyan University and Ohio State University. Following some years of chemical and fuel engineering work with commercial companies, Mr. Fieldner entered the service of the U. S. Geological Survey in 1907. On the organization of the Bureau of Mines in 1910, he was placed in charge of the fuel chemical laboratory at the Bureau's Pittsburgh, Pa., experiment station. He was appointed supervising chemist of the Pittsburgh Station in 1919 and was made chief chemist of the Bureau in 1925. In 1927, he was appointed chief engineer of the Experiment Stations Division.

Mr. Fieldner was in charge of gas mask investigations for the Bureau in the World War period, later being commissioned as major in the Chemical Warfare Service. He developed American methods of testing gas masks and gas absorbents and methods of testing and analyzing coal, coke and gas. He had charge of research on ventilation of the Hudson River vehicular tunnel. He is the author of numerous monographs and scientific articles.

● SALES of all lead and zinc pigments were higher in 1935 than in 1934, according to statistics released by the U. S. Bureau of Mines. The upward trend in lead pigments marked a continuation of that in 1934 while the trend in zinc pigments was a reversal of the downward movement in 1934. The average values received by producers of virtually all pigments declined in 1935, those of zinc falling more than lead. Tonnage increases in sales, however, were sufficiently large to bring about higher total values of all pigments. The total value of lead pigments was $28,064,000 in 1935 compared with $24,002,000 in 1934, an increase of 17 percent. The total value of zinc pigments was $26,500,000 in 1935 compared with $24,106,000 in 1934, an increase of 10 percent.

The lead pigments as a whole enjoyed their best year since 1930. Sales of white lead (dry and in oil) registered the largest proportionate increase in 1935 but this industry had suffered more severely than the others. Whereas sales of white lead were the highest recorded since 1931, those of red lead were the largest since 1930 and those of litharge were the largest since 1929.

There were noteworthy increases of 14 and 46 percent, respectively, in sales of zinc oxide and leaded zinc oxide in 1935, following declines of 12 and 10 percent, respectively, in 1934. Sales of zinc oxide were the largest recorded since 1930 and those of leaded zinc oxide have been exceeded in only two or three previous years. The average prices for French process zinc oxide were reduced sharply in early October, 1935. Lithopone sales were 10 percent higher in 1935 than in 1934 and were the largest recorded since 1930.

—— *Personals* ——

E. T. Stannard, president, Kennecot Copper Corporation, and **L. S. Cates**, president, Phelps Dodge Corporation, were recently awarded the Degree of Doctor of Engineering by the Michigan College of Mining and Technology.

George C. Dillman will be inaugurated as president of the Michigan College of Mining and Technology, at Houghton, Mich., on August 6.

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James F. Callbreath, Secretary Emeritus, The American Mining Congress, left Washington late in July to spend several months at his ranch in the San Luis Valley, Alamosa, Colo. He will attend the annual meeting of the Western Division of the organization, in Denver September 28 to October 3.

A. E. Carlton, Cleveland Cliffs Iron Company, has been reelected president of the American Wholesale Coal Association.

T. H. Millsop has been elected president of the Weirton Steel Company.

Speakers on the program of the Mineral Section of the American Bar Association, at its annual meeting scheduled for the last week in August at Boston, are: **Donald A. Richberg,** who speaks on "Critical Problems of Industrial Control"; **C. F. Hosford,** chairman Bituminous Coal Commission, who speaks upon "Price Regulation in the Bituminous Coal Industry Under Federal Law"; a debate on the Guffey bill will be participated in by **J. L. Steinbugler** and **J. V. Norman.**

Lewis W. Douglas, vice president, American Cyanamid Corporation, former Director of the Budget, recently underwent a serious operation, and is now recuperating satisfactorily.

Godfrey M. S. Tait announces his affiliation with the law firm of Moyle & Wilkinson, No. 1109 Earle Building, Washington, D. C., in a consulting capacity. Captain Tait has for years made an intensive study of the relations between the Government and the coal industry, both in private practice, as well as a Government representative, on such controversial subjects as taxation, price regulation, freight charges, etc. On the formation of the National Coal Board of Arbitration last year Captain Tait was unanimously chosen to act as chairman, which post he held until the decision of the Supreme Court holding NRA unconstitutional, automatically dissolved the board.

H. Foster Bain has returned from the Far East and will be associated for the summer in certain professional work with Samuel H. Dolbear and Lawrence B. Wright, mining engineers and geologists at 17 Battery Place, New York City.

Julian D. Conover, Secretary, The American Mining Congress, has recently been at Denver, Colo.; El Paso, Tex.; Phoenix, Ariz.; Los Angeles, Calif.; San Francisco, and the Mother Lode District of California; Seattle, Wash,; Boise, Idaho; Butte, Mont.; Salt Lake City, Utah; where he has conferred with mining men in regard to the coming metal mining meeting at Denver. He will visit the Tri-State Lead and Zinc fields before returning to the Washington headquarters.

Dr. John Wellington Finch, director, U. S. Bureau of Mines, will be a speaker at the Western Division meeting of the American Mining Congress.

Lawrence B. Wright and **Samuel H. Dolbear** have jointly been designated as consulting engineers to the Anglo American Mining Corp., Ltd. This company operates the Yellow Aster mine at Randsburg, Calif., and also the Oceanic quicksilver mine in California.

Scott G. Lamb, of the Anthracite Institute, has resigned from that organization to become associated with Whiteley and Buckalew, Inc., in charge of their Philadelphia office at 123 South Broad Street. He will assume his new duties on August 15.

Robert T. Banks, northwest manager of the Sullivan Machinery Company in Spokane for the past 16 years, has been transferred to become division manager for the company at Claremont, N. H. Mr. Banks was an honored guest this week at a meeting of the Northwest Mining Association where he was presented with a gold watch chain and a gold prospector's pick. **J. A. Neslege,** of Salt Lake City will succeed Mr. Banks in Spokane.

—Died—

J. A. Page, of the Carbon Fuel Company and for many years secretary of the Y. M. C. A. work sponsored by the company at its Decota, W. Va., mines, died on July 12. Mr. Page was overcome by heat while on a visit to Jackson, Mich.

Silver at the Cross Roads

(*Continued from page* 19)

a long time to reach its objective. With both friends and critics assailing the Silver Purchase Act, silver is definitely at the "cross-roads" of its destiny. Those who have advocated the wider use of the white metal should not be discouraged by the apparent lack of tangible benefits during the past year. Naturally, the domestic silver producers desire higher world silver prices, but this goal may only be reached by reinstatement of silver into its proper place internationally. A mere subsidy by the government to the silver mines of the United States would at best be only a temporary measure.

The rehabilitation of silver, through its permanent addition to the metallic money-base of the world, appears to be justified and it is, therefore, to be hoped that ultimately it will be accomplished. This will be a definite aid to the silver producer, but its accomplishment cannot be justified for that reason alone.

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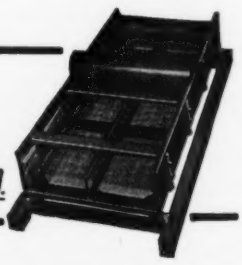

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The Manufacturers Viewpoint

● THE PORTABLE LAMP AND EQUIPMENT COMPANY, 72 First Avenue, Pittsburgh, Pa., has recently developed two new and original first-aid products for the mining industry. They include a heated first-aid cabinet, especially designed for better care of the injured, and a combination splint and stretcher board for more efficient handling of the injured. The cabinet, made of 22 gauge sheet steel, in safety green, is 54 in. in height, 27 in. wide and 12 in. deep. The upper portion of the cabinet has a steel shelf for holding eight hot sand bags for shock treatment. The shelf is perforated and the bags are kept heated at all times by two 75-watt lamps underneath the shelf. The lower portion of the cabinet has the necessary compartments for storing first-aid materials. Clean dry storage space, for sterile dressings, is provided by means of a patented dust-proof inner door which has withstood a laboratory test of dust blown at high velocity for three hours. Two keys are provided with each cabinet.

The combination splint and stretcher board has many advantages over the regular army type canvas stretcher. The board is made of clear poplar and is 7 ft. long, 17 in. wide and 1½ in. thick. It is heavily cross-braced and provided with insulated feet which keep the board elevated off the floor or ground. In addition to three hand-holes along either side of the board, for transportation purposes, there are six additional slots, scientifically placed in such a way that when triangular bandages are put in the slots and the patient is firmly bound to the board, he automatically receives the best attention for first-aid treatment of fractured spine, pelvis, thigh, leg, ankle and knee. The boards are strong and durable, there is nothing to wear out and the manufacturer claims the stretcher-board will save suffering, splints and dressings.

● HARRY J. KICHERER has been appointed works manager by the American Hoist & Derrick Co., of St. Paul, Minn. Mr. Kicherer comes from the Caterpillar Tractor Co., Peoria, Ill. He was formerly a St. Paul man, having previously been with the Russell Grader Co., before it was absorbed by Caterpillar. He graduated as a mechanical engineer from the University of Iowa and has had 20 years of practical experience in the manufacturing of construction equipment, road machinery and other mechanical products. He is a member and past chairman of the Northwest Chapter of the American Society of Metals.

● SULLIVAN MACHINERY COMPANY announces a new bulletin on their line of Unitair Compressors. The Unitair is a two-stage, completely air cooled, V-type, single acting stationary compressor incorporating many advanced features in compressor design. The ability to install in a short time, ability to operate on little foundation, designed for 24-hour service and other features such as Micro-lift valves, all-at-once inspection. Available in four sizes to 400 C. F. M. displacement and for any kind of drive: built-in electric motor; direct connection or V-belt drive from motors and gasoline, distillate or diesel power units. Bulletin 88-0 is available upon request to Sullivan Machinery Company, Dept. 21, Michigan City, Indiana.

● ONE of three large coal handling grab buckets furnished by Robins Conveying Belt Company, under a recent contract for replacing the former buckets on unloading towers at three ports on the Great Lakes. These buckets are unique in the relation of live-load to dead load. The former buckets, which these will replace, each weighed 20,000 lbs., and carried a load of 20,000 lbs. of coal. Each of the new buckets, operating with no additional power or speed, will handle 24,000 lbs. of coal without increasing the total load on the hoisting lines. The total weight of one of the new buckets is slightly under 17,000 lbs. The height of the bucket when closed is 13 ft. 4 in. and the open bucket has a spread between jaws of 18 ft. 10 in.

The increased efficiency of about 20 percent obtained with these buckets is due partly to the use of alloy metals throughout and partly to the advanced and improved engineering.

● ALLIS-CHALMERS MFG. CO., of Milwaukee, Wis., announces a new piece of machinery designated as a Blade Mill. It is a special development for washing, disintegrating, and cleaning ores, stone and other products containing a large amount of clay, slime, or other materials that are detrimental to subsequent processes of treatment. The inner periphery of the mill is provided with a series of quick-removable log washer type teeth, arranged for angular adjustment on special bases to which the teeth are attached. The disintegration is effected by combined cutting and rolling action in water within the mill. It is said to have a much wider application than the conventional log washer, as it can handle material up to 12 inches or larger in size. The mill is arranged for variable speed and variable pulp level. The combination of angular adjustment of blades, with variable depth of pulp and speed, provides unusual flexibility. It has a wide range of adaptability both for the treatment of ores and in the aggregates industry. The results of operating units lead to the expectation of the abandonment of the log washer.

● TO better facilitate the handling of increased activities in the Southwest, the Marion Steam Shovel Company, Marion, Ohio, is opening an office in San Antonio, Tex. Paul E. Piersol will be in charge. Temporarily, Mr. Piersol's headquarters will be with Motor Equipment Corporation, 419 N. Flores Street. Motor Equipment Corporation has recently taken over the distributorship of Marion Excavators for Texas and New Mexico, which will embrace Marion's Southwestern territory.

● THE AHLBERG BEARING COMPANY announces the issuance of a new loose-leaf catalog containing complete engineering specifications on its new CJB Pillow Block (and other mounted ball-bearings) which was first presented to the public at the National Machine Tool Builders' exhibit at Cleveland. The booklet also contains complete data on the company's line of ball-bearings. A special edition has been prepared exclusively for coal mines which contains application data on ball-bearings as applied to various mine equipment. A request directed to the general offices of 321 East 29th Street, Chicago, or to any of its 28 branch warehouses will bring a copy by return mail.

● Operators of electrical equipment watch overall costs—machine maintenance as well as brush cost. They specify "SA" Series Brushes because the five grades, with graduated performance characteristics, permit selection, for every machine, on the basis of good commutation, good brush life and low maintenance expense.

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